

# Audio

THE INDUSTRY'S BIBLE

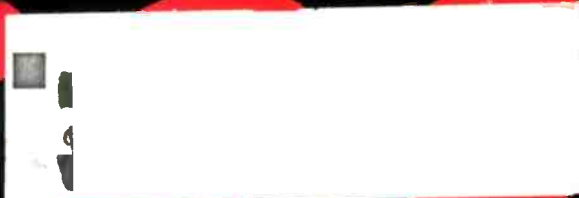
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## 32<sup>nd</sup> ANNUAL EQUIPMENT DIRECTORY

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# History Repeats Itself.

History shows that in 1973 the Nakamichi 1000 forever changed the destiny of the audio cassette. Against all odds the world's first true three-head cassette deck had transformed a medium designed for convenience into a serious audio recordist's dream-come-true.

And over the years the Nakamichi 1000 has come to represent a product philosophy—an example of what can be accomplished when a group of single-minded people throw out the rules and eliminate the word "compromise" from their vocabulary.

If, therefore, you're inclined to expect achievements of historical proportions in the new Nakamichi 1000 Digital Audio Recording System, you won't be alone, and you won't be disappointed.

You'll notice a profound difference the very first time you use the Nakamichi 1000 Digital Audio Recorder. Unlike other DAT recorders, the Nakamichi 1000 neither loads nor feels like a VCR. The

smooth, rapid, and quiet operation of the transport will rather remind you of the acclaimed Silent Mechanism found in Nakamichi's analog cassette decks.

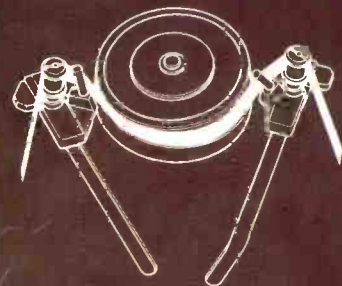
That's because the unique F.A.S.T. (Fast Access Stationary Tape Guide Transport) mechanism was designed from the ground up as a digital audio tape transport. Its exclusive, patented stationary tape guides assure more precise and stable tape alignment, so digital error caused by mistracking is dramatically reduced. And articulated link arms gently bring the tape into playing position within 1.9 seconds after a cassette is inserted—two to three times faster than VCR-derived DAT mechanisms.

The four-head drum has separate record and play heads, so you can move off the tape while you record. And a unique half-load position fast-winds the tape at 400-times normal play speed—twice that of conventional fast wind—with less wear and tear on tape and heads.

Included with each Nakamichi 1000 recorder is the 1000r infrared wireless remote controller, which gives you full access to the deck's expansive array of advanced operating features.

The Nakamichi 1000p Digital Audio Processor establishes a new reference

standard for sonic accuracy. 8-times oversampling digital filters and fully calibrated 20-bit digital-to-analog converters deliver unprecedented resolution, linearity, and dynamic range.

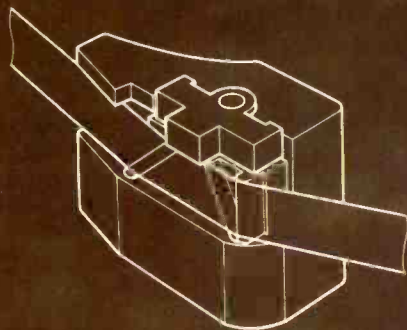


In conventional VCR-derived DAT mechanisms tape alignment guides move with the loading arms. Nakamichi's F.A.S.T. mechanism has exclusive stationary tape guides for faster alignment and superior long-term accuracy.



Nakamichi 1000 Digital Audio Recorder





Each stationary tape guide block actually consists of four separate guide surfaces—two slanted, one vertical, and one horizontal—that work together to more reliably maintain critical tape alignment.

Simply increasing the number of bits is meaningless unless they are implemented with a high degree of precision. So, the Nakamichi 1000p 20-bit D/A converter employs a novel ROM (read-only memory) calibration system. Each D/A converter IC has a corresponding ROM chip programmed at the factory with individual bit error compensation data. Together with a newly developed glitch cancellation circuit, this sophisticated calibration system brings the D/A converter to the theoretical limits of 20-bit performance.

The equally advanced analog-to-digital converter employs an ingenious charge comparison principle that assures accurate encoding without conventional, distortion-causing sample-and-hold circuits. And an extraordinary auto-calibration system precisely trims the quantization increments for all bits within 1.4 seconds every time the 1000p is turned on. That means, unlike typical designs, the 1000p's A/D converter maintains its high level of precision forever.

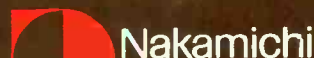
Finally, to eliminate the adverse effects of any jitter at the digital inputs, the Nakamichi 1000p incorporates a sophisticated two-speed phase-locked-loop interface that more effectively handles a wide range of time-axis fluctuations.

Perhaps most significant is the basic design of the Nakamichi 1000 Digital Audio Recording System. Not content to capture a mere, fleeting moment in audio history, Nakamichi engineers have made the system easily upgradable. The essential circuitry of both recorder and processor resides on plug-in boards, all readily accessed from the rear panels. The system thus delivers the very best performance available today... whenever "today" happens to be.

Prove it to yourself by auditioning the Nakamichi 1000 Digital Recording System. It promises to be an unusual opportunity to witness history in the making. Again.



The system's modular plug-in circuitry accommodates change and, thus, defies obsolescence.



Nakamichi America Corporation  
1970 South Vermont Avenue  
Torrance, CA 90502 (800) 421-2313  
(800) 223-1521 (California)  
Nakamichi Canada (800) 663-6358



Nakamichi 1000p Digital Audio Processor



Nakamichi 1000r Remote Controller





Directory, page 182



Wynton Marsalis, page 170

## ANNUAL EQUIPMENT DIRECTORY

|                                      |     |
|--------------------------------------|-----|
| SPECIAL SECTION TABS                 | 179 |
| CD PLAYERS & D/A CONVERTERS          | 182 |
| DAT RECORDERS                        | 204 |
| AMPLIFIERS                           | 206 |
| PREAMPLIFIERS                        | 236 |
| TUNERS                               | 258 |
| RECEIVERS                            | 264 |
| TURNTABLES                           | 273 |
| TONEARMS                             | 278 |
| PHONO CARTRIDGES                     | 280 |
| OPEN-REEL TAPE DECKS                 | 294 |
| CASSETTE DECKS                       | 296 |
| BLANK TAPE                           | 302 |
| MICROPHONES                          | 305 |
| HEADPHONES                           | 322 |
| EQUALIZERS                           | 332 |
| AMBIENCE & SURROUND SOUND PROCESSORS | 337 |
| SIGNAL PROCESSORS                    | 342 |
| CROSSOVERS                           | 344 |
| HI-FI VCRs                           | 350 |
| LOUDSPEAKERS                         | 353 |
| COMPANY ADDRESSES                    | 483 |

## FEATURES

|                         |                |     |
|-------------------------|----------------|-----|
| CENTENNIAL CELEBRATION: |                |     |
| HEINRICH R. HERTZ       | Almon H. Clegg | 68  |
| RESTORING OLD MASTERS   | Daniel Sweeney | 148 |
| THELONIOUS MONK:        |                |     |
| SPHERE OF INFLUENCE     | John Sunier    | 152 |

## MUSIC REVIEWS

|                      |     |
|----------------------|-----|
| ROCK/POP RECORDINGS  | 154 |
| CLASSICAL RECORDINGS | 164 |
| JAZZ & BLUES         | 170 |

## DEPARTMENTS

|                     |                         |
|---------------------|-------------------------|
| SIGNALS & NOISE     | 4                       |
| CODA: GORDON J. GOW | Maurice L. Painchaud 39 |
| THE BOOKSHELF       | 44                      |
| SPECTRUM:           |                         |
| FM DYNAMIC RANGE    | Leonard Feldman 57      |
| TAPE GUIDE          | Herman Burstein 73      |
| AUDIO ETC           | Edward Tatnall Canby 74 |
| BEHIND THE SCENES   | Bert Whyte 83           |
| WHAT'S NEW          | 103, 112, 138           |
| AUDIOCLINIC         | Joseph Giovanelli 104   |
| FORUM: DAT PACT     | Leonard Feldman 118     |
| ROADSIGNS: LEXUS    | Leonard Feldman 123     |
| SPECTRUM: SCES WRAP | John Eargle 133         |

The Cover Equipment: a/d/s/ CM-7 loudspeaker, Dual ST-5040 tuner, JVC XP-A1010TN surround sound processor, Mark Levinson No. 26 preamplifier, McIntosh Laboratory 7200 power amplifier, Mitsubishi M-AV1 receiver, NAD 7400 receiver, Nakamichi 1000 Digital Audio Recording System, Rainbow Rax rack system, Sony CDP-X7ESD CD player, and Chaplin chair courtesy of Classic Age in New York City.  
The Cover Photographer: Bill Ashe.

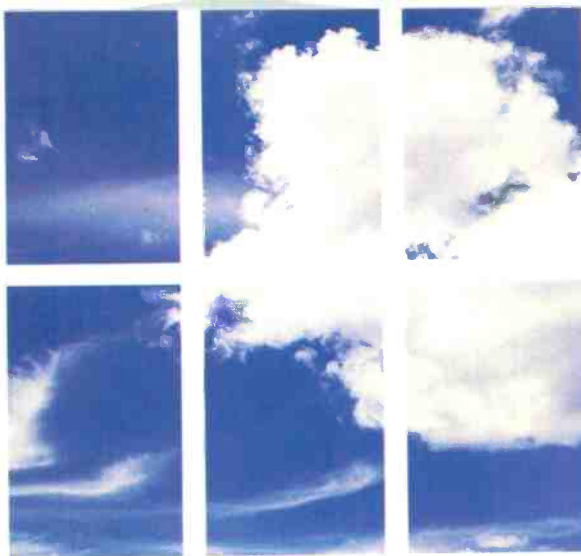
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## A Form of Complaint

Dear Editor:

We tire of filling out these arcane "Annual Equipment Directory" forms year after year. The format is hideous. Half of the labelling is vertical, with the information to be filled in horizontally. A redesign is in order, as is a simplification of data requested. These forms are geared toward an era when specs were more important than music. That is no longer the case.

Michael Zeuglin

President

Audio Influx Corp.

Highland Lakes, N.J.

*Editor's Reply:* Well, uh, yeah—or at least maybe there was an era when specs were more important, but I don't think that they were ever *more* important than the music. On the other hand, I'm not so certain I want to have folks comparing the sound of their preamp to a particular year of Lafite-Rothchild. I mean, I can remember what order numbers come in (unless, of course, I'm had too much wine) and usually there is a regular, ordered difference between any two numbers. However, to talk about nonlinearities, is the difference between a '67 Rothchild and a '73 the same as the difference between a non-vintage Mogen-David and Sandeman sherry? Or maybe the standard of comparison for a phono cartridge becomes an Acapulco sunset? I think I'd rather stick with a ruler to measure with.—E.P.

## FM Fatale

Dear Editor:

I've been an avid *Audio* subscriber for years and always read "Signals & Noise" with interest. I would like to comment on author Robert Angus' reply to a letter entitled "FM in China" (August). What I have to say is more for his information than anything else.

Angus noted that he could not find any FM frequencies for China in the *World Radio TV Handbook*. Since I do not know the year of the particular *Handbook* he checked, I cannot be sure whether any FM frequencies were listed or not. However, the following is a list of FM frequencies in the *Handbook* editions for 1986 through 1989: 1986, no listing; 1987, no listing; 1988, Zhujiang Economic Broadcast Station

(95.6 MHz), and 1989, same as for 1988 plus Programs in English (91.55 MHz).

I have been an avid shortwave listener for years and have found the *World Radio Television Handbook* extremely helpful. However, the data is constantly changing for many reasons; there are even four updates printed per year for the *Handbook*. It pays to look at the latest edition available and to learn the quirks of finding information in this text.

In short, I just wanted to let people know that the *Handbook* is a good reference tool when used within its constantly changing form.

Marty P. Hoar

Longmont, Colo.

## Cinema to the Max

Dear Editor:

With the popularity of Compact Discs, VHS Hi-Fi VCRs, and now laser videodiscs with digital stereo sound, it seems that *everyone* is looking for the best audio. Digital sound also will be one of the benefits of the HDTV system, *if* and *when* it ever arrives. Not many people seem to know this, but television with superb digital stereo sound is available right now.

What is the device? A home satellite receiver equipped with a Videocipher II de-scrambler. The sound is in digital stereo on all subscription stations; it is of CD quality, and the video quality is as sharp as the sound.

With a laser videodisc player, one is stuck with watching a limited number of expensive discs. However, with a satellite receiver equipped with the Videocipher II system, one gets the same superb sound and picture that a laser videodisc player provides but with a virtually unlimited number of movies. Add a Hi-Fi video recorder, and it becomes easy to build a large library of movies with Hi-Fi Dolby surround sound. I think of it as a never-ending series of laser videodiscs.

There are currently over 40 subscription channels, all with digital sound. Sometimes, the sound is in mono; it depends on the material itself. It is very clear to me that this is *the* way for me to get the most entertainment value for my money.

Thomas R. Wiles

West Fork, Ark.



# PRODUCT LITERATURE GUIDE

To make this year's Annual Equipment Directory as authoritative as possible, the following manufacturers have provided comprehensive information on their products.

Place Product Lit.  
tab here

|                                   |                    |
|-----------------------------------|--------------------|
| <b>ADCOM®</b>                     | 187-190, 269-272   |
| <b><u>American Acoustics</u></b>  | 175-178            |
| <b>audio research corporation</b> | 211-214, 247-250   |
| <b>BRYSTON</b>                    | 69-73              |
| <b>California Audio Labs</b>      | 40-43              |
| <b>CARVER</b>                     | 77-82              |
| <b>COUNTERPOINT</b>               | 125-132            |
| <b>JVC</b>                        | 49-56              |
| <b>KENWOOD</b>                    | 367-374            |
| <b>LUXMAN</b>                     | 197-202            |
| <b>MK SOUND CORPORATION</b>       | 113-117            |
| <b>mirage®</b>                    | 136-137            |
| <b>NAD</b>                        | 228, 229, 231, 233 |
| <b>ONKYO</b>                      | 58-67              |
| <b>PHILIPS</b>                    | 139-147            |
| <b>PIONEER®</b>                   | 31-38              |
| <b>polk audio</b>                 | 7-30               |
| <b>SONANCE</b>                    | 355-358            |
| <b>Soundcraftsmen</b>             | 87-102             |
| <b>SUNO</b>                       | 106-111            |

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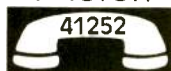
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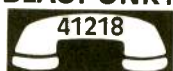
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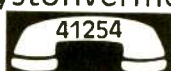
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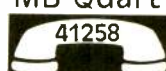
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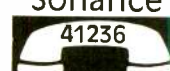
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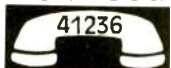
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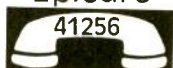
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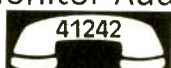
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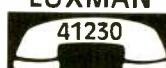
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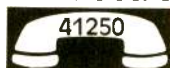
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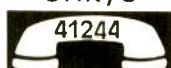
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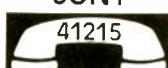
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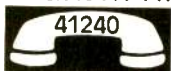
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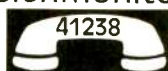
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*Matthew Polk's Dedication to Quality  
Brings You Superior Technology, Performance and Value.*



*"Vastly Superior to the Competition."* Musician Magazine





## "Polk's Dedication to Quality Results in Dramatically Better Sound."

*State-of-the-Art Technology, Performance and Value*

### The Joys of Owning Polks

**Incredible three-dimensional imaging** that can re-create the tingling excitement of a live performance.

**Smooth, accurate and extended frequency response** gives you hours of fatigue-free listening pleasure.

**Dynamic bass performance** effortlessly reproduces the thunderous impact of a full symphony orchestra or the most subtle nuances of a single plucked string.

**High efficiency and power handling guarantee** that at either low or high volumes your Polk speakers will deliver the finest possible sound and the utmost in reliability from virtually any power source.

### We Are The Speaker Specialists

At Polk Audio every minute of every day is spent pursuing our one and only goal: To design and build the world's finest loudspeakers.

### Polk Is # 1

Polk's reputation for performance and value is recognized throughout the audio industry. For the sixth year in a row, Polk Audio was selected as the #1 loudspeaker manufacturer in the Audio/Video Grand Prix Awards. In this select competition, the audio industry itself votes to honor the industry's best products and companies (much like the Academy Awards). In addition Polk Audio products have received an unprecedented series of rave reviews (see pages 10, 11, 16 & 17). Musician Magazine said that Polk loudspeakers are "Vastly superior to the competition."

### The Polk Secret of Excellence

How does Polk do it? By the strictest adherence to certain key design goals:

**"You Are There" Musical Quality.** Polk engineers do not stop at mere technical accuracy. A Polk loudspeaker design is not complete until the speaker can create the illusion and excitement of a live musical performance with every type of music.

**Uniform Quality.** You will find award-winning technology and performance in every Polk speaker system regardless of price. We build each and every speaker with the same world-class standards of quality and dedication to sonic accuracy.

**Unexcelled Value.** Matthew Polk and his engineers follow this rule: Design to the highest standards of performance, and make them affordable. As a result, Polk speakers offer more performance per dollar in every price range than any other speakers on the market.

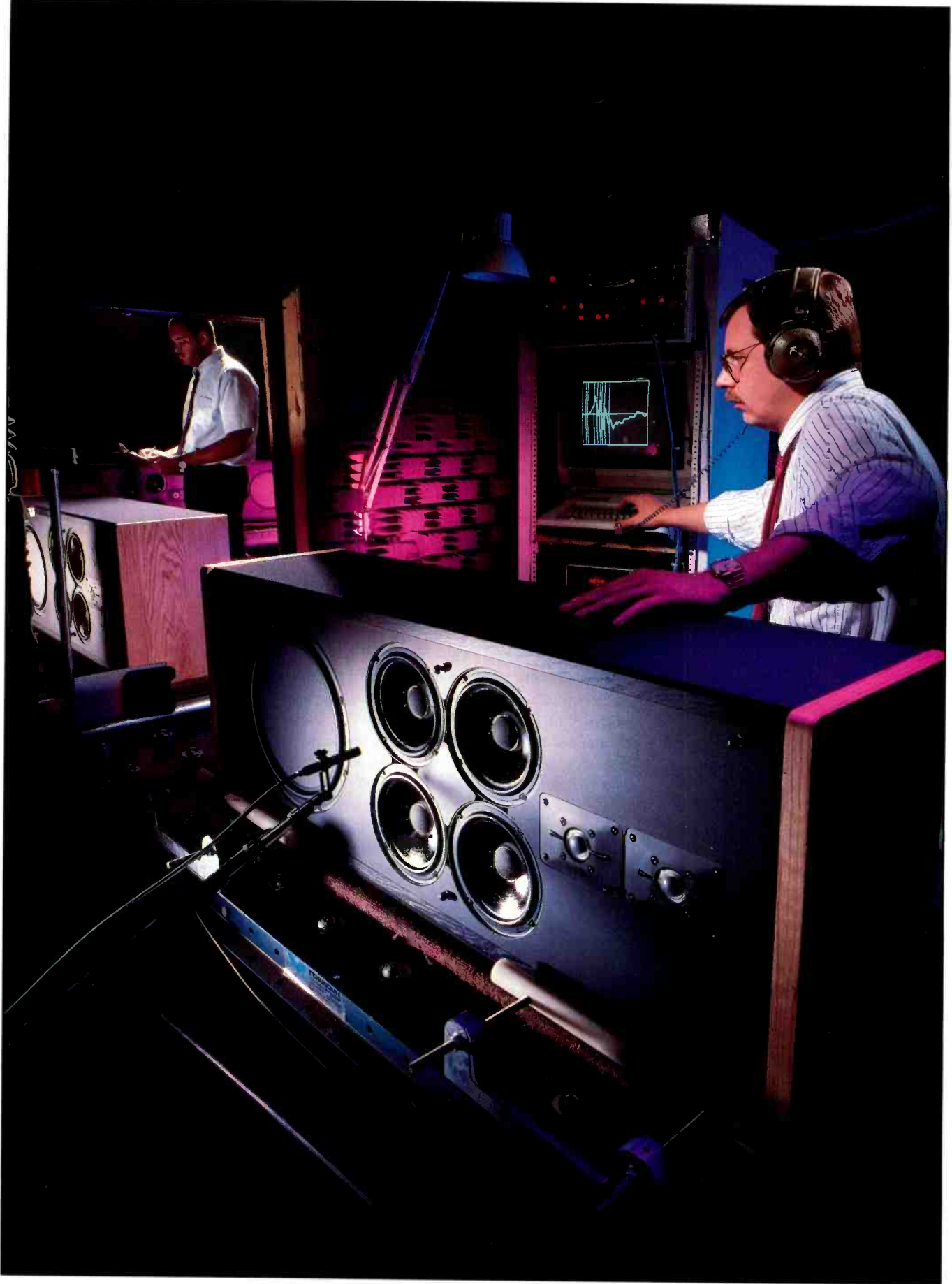
**Finest Materials.** The Polk engineering team travels the world to obtain the finest materials offering the highest level of performance and the most years of trouble-free operation.

**Exacting Standards.** Every single driver, crossover and finished speaker produced by Polk Audio is painstakingly tested both by skilled technicians and Polk's computerized quality control program. Your Polk speakers will always sound as good as Matthew Polk's own laboratory-standard models.

At Polk Audio, human creativity, space-age materials and computer accuracy have been artfully combined to produce speakers of superb musical quality. If you're looking for life-like musical reproduction, world class technology and unexcelled value, Polk speakers are the perfect choice.



*Quality Control*





## “Polk’s Quality Assurance Program Guarantees Superior Sound and Total Satisfaction”

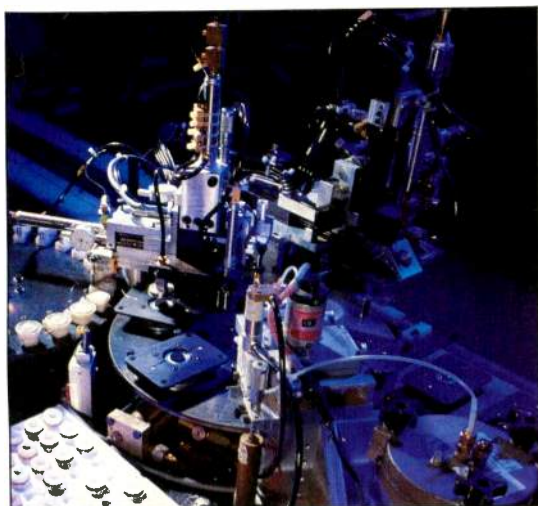
*Only One Standard of Quality: The Best*

- Advanced production equipment and fine workmanship
- Every component individually computer tested
- Every finished speaker system tested by computer and by ear
- Strict adherence to exacting specifications
- Uniformly high standards of performance and quality maintained throughout the line

### The Quality Challenge

Matthew Polk knows that it is not enough to design the best sounding loudspeakers. He knows that the true test is to bring the sonic perfection of his laboratory prototypes to every single Polk customer.

Polk Audio meets this challenge with an impressive array of technology, facilities and meticulous craftsmanship. Unlike many speaker brands, Polk Audio operates its own manufacturing facilities. We even design and build our own high-precision automated production equipment to insure that demanding Polk performance standards are rigorously maintained throughout the entire manufacturing process.



Polk speakers are assembled with exacting precision by sophisticated machinery designed and built by Polk Audio engineers.

### Polk’s 100% Plus Quality Program

In order to guarantee that every Polk loudspeaker performs to the high standards set by Matthew Polk, we make quality the number one concern from beginning to end during the manufacture of every loudspeaker. When parts and raw materials arrive at Polk Audio, every shipment is carefully checked for conformance to our specifications. Critical parts, such as capacitors, inductors and voice-coils are individually scrutinized for proper value before being approved for use. Next, components such as drivers, crossovers and sub-bass radiators that are manufactured by Polk Audio are individually subjected to a battery of computerized and manual tests before they can be approved for assembly into a finished Polk loudspeaker. Last, cosmetic inspections are performed before, during and after the completion of every loudspeaker.

### The Ultimate Test

Before they are carefully packed for shipment, every single Polk speaker system is tested by sophisticated, custom-designed computer programs, and by the ultimate judge of sonic quality — the human ear. Every Polk speaker must live up to Matthew Polk’s demanding standards of sonic and cosmetic quality before leaving the factory.

### Polk Guarantees Satisfaction

Every Polk home loudspeaker carries a five-year parts and labor limited warranty. In addition, every Polk speaker is backed by our fanatical dedication to your ultimate and enduring satisfaction. In numerous independent surveys, Polk has been voted #1, not only for its superior products, but also for maintaining an outstanding level of dealer and customer service. All authorized Polk dealers maintain a stock of replacement parts to assure immediate service should a problem develop.

These are only a few reasons why Polk Audio customers are so loyal. Should you own Polk loudspeakers? Just ask a friend who does.

## State-of-the-Art Components

### Polk Isophase Crossover System

A speaker's crossover acts much like the conductor of an orchestra. It tells each driver when and how loud to play. Even the best drivers would sound bad if poorly matched and blended together by an inexpensive crossover. Hidden from view, many manufacturers will skimp on the quality of their crossovers, resulting in poor overall sonic performance. Polk recognizes the vital importance of a system's crossover and spares no effort or expense in designing and building this critical component. Expensive air-core pure copper coils are used to insure wide dynamic range and excellent sound quality at every volume level. Precision resistors and capacitors are also used to maintain perfect driver blending and the lowest possible distortion.

### Polk Fluid-Coupled Subwoofers

Used in most of the Polk home speakers, the fluid-coupled subwoofer system realizes the advantages of both small and large woofers at the same time. Small woofers are faster, have better midrange response, and wider dispersion. Large woofers move more air and thus produce louder, deeper bass. In the Polk system, the small bass midrange drivers hydraulically and elastically transfer low frequency energy below 60 Hz to the large, low-resonance sub-woofer. The result is remarkably deep, powerful, clear and detailed bass.



## **"Polk Builds State-of-the-Art Components For Lifelike Sound, Quality and Reliability."**

*Consistently Superior Technology Results in Better Sound.*

### **Exclusive Trilaminate-Polymer Drivers**

Polk drivers are unique and superior in performance and reliability. Rather than accepting the sonic compromises of one cone material, we laminate three complimentary cone materials together to achieve a level of performance unmatched by simple paper or plastic cones. The basic lightweight and strong fiber cone is first laminated with a space-age polymer that stiffens the material to prevent distortion; a second polymer is then added to eliminate resonance and coloration through visco-elastic damping. Polk drivers also use costly butyl rubber surrounds for more accurate cone movement and deeper bass response, and to prevent the deterioration experienced over time with foam surrounds. The result is a driver that faithfully reproduces the timbre of every musical instrument and voice while maintaining every subtle detail of the composition. Your Polk speakers will sound great year after year, after year.

### **We Build Our Own Component Parts**

The sound quality of a loudspeaker is ultimately determined by the quality and consistency of its component parts and the ability of the designer to successfully combine those parts to achieve a coherent, seamless and balanced musical presentation. A brilliant design concept is easily ruined by the use of inferior parts and inadequate cabinet construction. Recognizing this, Polk's engineers insist on designing, building and testing components in our own factories. As an owner of Polk loudspeakers, you have our guarantee that your speakers conform to Matthew Polk's singular vision of musical accuracy, consistency and reliability.

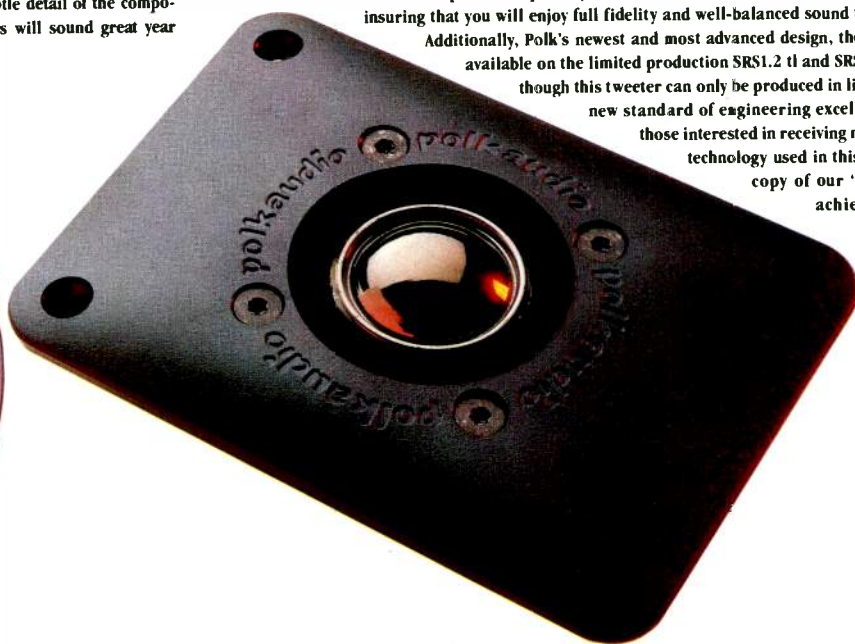
### **Polk's SafetyGuard Tweeter Protection Device (not pictured)**

This distortion-free circuit instantaneously shuts down the tweeter(s) when the speaker is overdriven. And unlike crude fuses, Polk's SafetyGuard is fast, effective and self resetting.

### **Polk's Exclusive Tweeter Design**

Every detail of Polk's exclusive tweeter design has been critically engineered to insure the listener the ultimate in high-frequency performance. The voice coil is precision wound with high-conductivity coated wire for more extended high frequency response. The ultra light polyamide dome is extremely fast for superior transient response. It allows the listener to perceive even the most subtle detail and texture in the music. This remarkable soft dome also smooths and eliminates annoying resonances and peaks thereby avoiding the shrillness and edgy sound of hard-dome designs. The small diameter dome shape and a specially contoured minimum diffraction faceplate provide wide dispersion insuring that you will enjoy full fidelity and well-balanced sound throughout your listening room.

Additionally, Polk's newest and most advanced design, the SL3000 trilaminate tweeter, is available on the limited production SRS1.2 tl and SRS 2.3 tl loudspeaker systems. Although this tweeter can only be produced in limited quantities, it represents a new standard of engineering excellence in component design. For those interested in receiving more detailed information on the technology used in this design, please contact us for a copy of our "white paper" on engineering achievements incorporated in the SL3000 tweeter.



*The SRS Series*

polk audio

SRS 2.3 II

*"The sound is superbly balanced and totally effortless."* Stereo Review Magazine



# “Matthew Polk’s SRS Speakers Bring You the Ultimate Listening Experience”

*“Spectacular... it is quite an experience.”* Stereo Review Magazine

## The Joy of Owning the Ultimate Dream Speakers

Music lovers who are privileged to own a pair of SRS’s will share in Matthew Polk’s dream every time they sit down and enjoy the spine-tingling excitement of listening to their favorite music. Demonstrating them to admiring friends ultimately increases their pride-of-ownership. “Awesome” is the word most often used to describe the sound of an SRS system. They are capable of playing at live concert levels for long periods of time, with a surprising lack of effort and without producing ear-fatigue.

The bass response can literally move your body any time the music requires it, yet they perfectly reproduce all of the subtle nuances of a string quartet and are just as enjoyable at a low volume level as when played loud. Music and ambience surround the listener in an almost 360-degree panorama of sonic splendor that is, in the words of High Fidelity magazine, “Mind-boggling....Astounding....Flabbergasting.” But words alone cannot possibly describe the experience of listening to these ultimate speaker systems, you simply must hear them.

### SRS 1.2 tl

*Two time Audio Video Grand Prix Winner*

The ultimate expression of Polk technology, this limited production flagship model sets the industry standards for imaging, detail, dynamic range, and bass reproduction.

### SRS 2.3 tl

*Audio Video Grand Prix Winner*

This scaled-down version of the SRS 1.2 tl incorporates all of flagship’s design innovations without significantly compromising its awesome performance.

## Polk Audio’s SRS: The Quest for Perfection

The goal of Matthew Polk’s Signature Reference System (SRS) speakers is to bring an unparalleled level of life-like musical reproduction to your home. Perfect musical reproduction, long the dream of every speaker designer, is approached so closely by Matthew Polk’s SRS’s that it will seem as if the musicians are performing right in your listening room. This stunning achievement combines technology and creative insight to bring you a listening experience that you will never forget.

**1. Patented SDA True Stereo Technology** — The first and only speaker systems to maintain full stereo separation all the way from the source to your ears. (see pg. 9 for a more complete description). SRS speakers seem to disappear as musical images fill your listening room and seem to immerse you in a fully three-dimensional soundfield of startling realism.

**2. Multiple Driver Arrays** — The use of multiple drivers allows each separate element to work less hard and lowers distortion even at live concert levels. Power handling is increased to 1,000 watts per channel, providing a seemingly limitless dynamic range.

**3. Time-Compensated Driver Alignment** — Time-coherent driver placement insures that the entire spectrum of sounds reaches your ears at the same time. The sound is better focused, balanced and less fatiguing.

**4. Wavelength Optimized Line-Source** — Vertical driver arrays focus the sound waves into the room in a way which greatly reduces floor and ceiling reflections. Progressive reduction of the acoustical length of the arrays maintains constant vertical dispersion and eliminates “comb” filtering effects that limit other multiple driver systems. The result is extraordinary clarity and detail, great flexibility in room placement and precise stereo imaging from virtually any place in the room.

**5. Planar 15” subwoofer** — SRS bass performance is breathtaking. The use of small active drivers (eight in the SRS 1.2 tl, six in the SRS 2.3 tl) coupled to a huge sub-bass radiator achieves a bass response that is extraordinarily tight, fast (no boominess), deep and distortion free. In fact, the distortion at 25 Hz is lower than that of many audiophile-quality tube amplifiers.

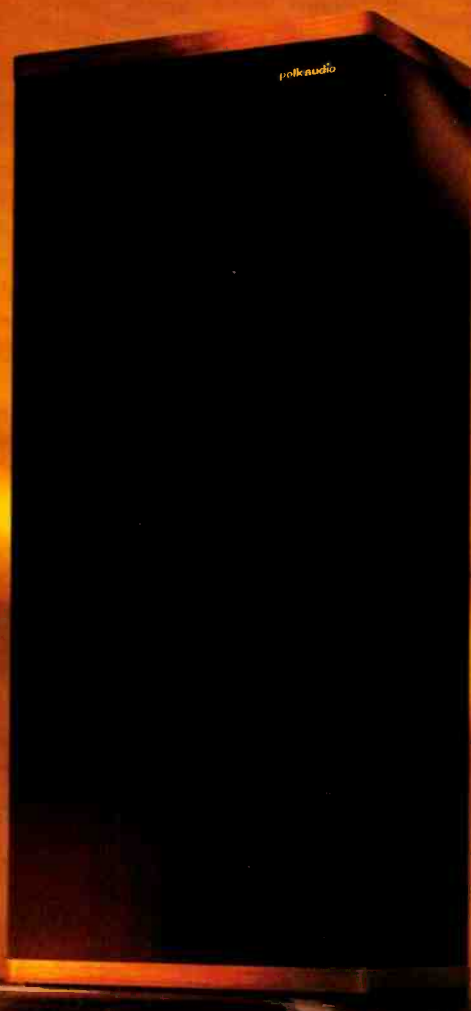
**6. Bi-amp Capability** — The optional use of separate amplifiers for the high and low frequencies further improves clarity, lowers distortion and increases dynamic range.

**7. Hand-Crafted Limited Production** — The one-at-a-time attention that goes into the production of every Polk SRS speaker system means that your pair will sound and look as good as Matthew Polk’s own.



Matthew Polk with the ultimate expressions of loudspeaker technology: The SRS 1.2 tl and SRS 2.3 tl.

*The SDA Series*



SDA 2B

*"They have the ability to make your previous favorite speaker sound almost second rate."*

Stereo Review Magazine



# "Polk's Revolutionary True Stereo SDAs Always Sound Better Than Conventional Speakers"

*"Mindboggling...Astounding...Flabbergasting"* High Fidelity Magazine

## SDA 1C

*Audio Video Grand Prix Winner*

This floor standing model uses SRS vertical line-source technology in an attractively slim, tower configuration, offering tremendous impact and amazing stereo imaging with a minimum use of floor space.

## SDA 1C Studio

Same configuration as the SDA 1C but in a vinyl clad cabinet.

## SDA 2B

*AudioVideo Grand Prix Winner*

The SDA 2B represents an incredible value which combines spectacular SDA performance with a remarkably affordable price. High Fidelity said listening to the SDA 2B is "an amazing experience."

## SDA 2B Studio

Same configuration as the SDA 2B but in a vinyl clad cabinet.

## SDA CRS +

*AudioVideo Grand Prix Winner*

The SDA Compact Reference System is the worlds' best sounding small speaker and can be either bookshelf or stand mounted. Stereo Review called the CRS "an impressive achievement." No other small speaker offers such a compact package of high technology and performance.



Polk Audio's Grand Prix Award winning SDA Series speakers. Pictured left to right, SDA 1C, SDA 2B and SDA CRS +.

## A Fundamental Advance in Loudspeaker Design

Polk's patented SDA technology is the most fundamental advance in loudspeaker design in twenty years. High Fidelity magazine said of the SDA design, "Polk reinvents the loudspeaker...startling evidence of the industry's essential creative vitality." Rolling Stone Magazine agreed when they wrote, "They truly represent a breakthrough." The Polk SDAs are the world's only "True Stereo" speakers, that is, the only speakers which are specifically designed to realize the full sonic potential of every stereophonic recording.

## The SDA Difference

In order to maximize performance, stereo separation is carefully maintained in all audio components. However, with conventional loudspeakers both ears hear both speakers and the two channels are mixed together before they ever reach your ears. Because stereo separation is not maintained all the way to your ears, much of the sense of spaciousness and sonic realism of the original recording is lost. The soundstage is only as wide as the distance between the speakers and sonic images are rendered flat and small.

Polk SDA speakers are the first true stereo speakers and are able to maintain perfect stereo separation all the way from the source to your ears. By acoustically isolating the two stereo channels, each ear hears only the correct stereo channel; the left ear hears left channel, and the right ear hears right channel. Recordings literally come alive in your listening room. Musical images are reproduced with incredible clarity and pinpoint accuracy. You are surrounded by a stunning three-dimensional sound stage that extends from wall-to-wall, and also wraps around you. Only with Polk Audio SDA loudspeakers can you hear all of the spaciousness and life-like imaging of the original performance.

## How SDA Technology Works

Conventional speakers allow both of your ears to hear both the left and right channels at the same time. This is called "Interaural Crosstalk Distortion." This crosstalk distortion could be prevented by building a wall between your speakers right up to your nose, so that each of your ears would hear only the speaker on one side of the wall. SDA speakers cancel this distortion, but in a much more comfortable, elegant, and highly accurate fashion. Each SDA speaker reproduces a signal that is the exact opposite of the undesirable crosstalk signal. This cancellation signal is timed to arrive at your ear at precisely the same time as the undesirable crosstalk signal. When these two signals combine, they naturally and acoustically cancel each other. What remains is one correct stereo channel delivered to each ear. In this way SDA speakers allow you to hear stereo performances the way they were meant to be heard.

## The SDA Advantage

Only Polk's patented SDA loudspeakers let you hear all of the information and spatial realism that is on the original recording. Conventional speakers restrict what you hear due to their failure to maintain complete stereo separation. Stereo Review magazine said that with SDA speakers: "The result is always better than would be achieved with conventional speakers." Hear the SDA advantage for yourself.

## *The Experts Rave about the SRSs and SDAs*

### **"Polk reinvents the loudspeaker"**

High Fidelity Magazine

*"The result is always better than would be achieved by conventional speakers..."*

Stereo Review Magazine

SRS 1.2 II

*"Polk's No Compromise Flagship Loudspeaker"* Stereo Review Magazine

"At the CES (Consumer Electronic Show) among the crop of new and often innovative speakers probably the most impressive was the Polk SDA Signature Reference System which shook the walls of the Americana Congress Hotel...Polk's no-compromise flagship loudspeaker offers new refinements on the Stereo Dimensional Array design...The SDA system works essentially as claimed...the effect can be quite spectacular...as good as the SDA feature is we were even more impressed by the overall quality of the SDA-SRS as a speaker system. The sound is superbly balanced and totally effortless...unusually open and integrated...the composite frequency response was exceptional no matter how you look at it...only at 10,000 Hz where presumably only one driver was in use, did we reach the limits of the speaker and the amplifier at the same time — 1,265 watts into 5 ohms...almost any amplifier can drive the SRS to the highest listening levels most people would want...the phase compensation of the system was exceptional...we have never measured a low bass distortion level as low as that of the SRS...we found that the passive radiator response varied only a total of 7dB between 12 and 90 Hz. Polk calls the passive radiator a "sub-bass driver" with good reason...it is quite an experience. Furthermore, with the SRS it is not necessary to play the music loud to enjoy the tactile qualities of deep bass...*Spectacular!*



SRS 1.2 II

Stereo Review Magazine

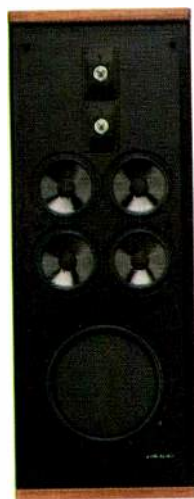


Conventional speakers with compressed sound stage.



Polk TRUE STEREO SDA Loudspeakers — Accurate reproduction of full sound stage width & depth.





SDA 1C

#### SDA 1C

*"Mind boggling powers of sonic persuasion"*

High Fidelity Magazine

**"Our first, all too brief, audition simply bowled us over. The width, depth and precision of the stereo image are astounding...after extended listening we were no less astonished mind-boggling powers of sonic persuasion...The SDA-1's strong suit (to put it mildly) is its imaging which ranges from very good to flabbergasting, depending on the material...devastatingly dramatic. With good classical discs, the soundstage seems to open up, presenting a greater sense of depth and enveloping the listener more fully in the recorded ambiance...But it's on fancy rock recordings that the system can really strut its stuff...it really is great fun. We find ourselves listening to unfamiliar recordings on other speakers and saying to each other, "I wonder what this would sound like on the Polks". Get an audition...It's worth the trouble just for the experience.**

High Fidelity Magazine

#### SDA CRS +

*"An Impressive Achievement..."*

Stereo Review Magazine

**"It was easy to forget that we were hearing speakers at all. Just the music remained, and it seems to us that this is what hi-fi is all about...the SDA-CRS is designed to compensate for the fact that in normal stereo playback each ear hears the sound from both speakers, which inevitably affects apparent channel separation and the stereo image...we drove the speakers as hard as our ears would tolerate, with a 350-watt-per-channel amplifier, and they never showed any signs of distress...Our measurements confirm that the Polk SDA-CRS is a very good speaker system — with a host of desirable qualities — when it is judged by the same standards**



SRS 2.3 II



**one would apply to conventional speakers. But it is not a conventional system, and it deserves to be examined for the special sonic qualities that are claimed for it.**

The fact that the SDA-CRS will fit in any room works as well on pedestals as against a wall (we tried them both ways), and costs less than half as much as the revised SDA-1A says something about its intrinsic merits. It is definitely not just another speaker."

Stereo Review Magazine



SDA CRS +

#### SDA 2B

*"Superb...it has the ability to make your previous favorite speaker sound almost second rate"*

Stereo Review Magazine

**"It took only a brief exposure to the sound of the SDA-2A to recognize its unique qualities...these speakers always sounded different from conventional speakers — and in our view better — as a result of their SDA design. Continued experimentation has led to design changes that both improve performance and reduce cost, and the result is the SDA-2A...the response was impressively flat and smooth...ranks with the best responses we have measured from a speaker. Our peak power tests of the Polk drivers confirm that they can handle any power that is likely to be supplied in a home speaker...When we listened to recordings having strong left-right separation the sound wrapped around us through an angle of at least 90 degrees, even though the speakers formed an angle of perhaps only 40 to 50 degrees with the listening position. With most stereo programs the speakers effectively disappear as sound sources, and the soundstage was seamless across the width of the room even with relatively close speaker spacing.**



SDA 2B

The Polk SDA-2A is right up there at the top of the class in every way. It has the ability to make your previous favorite speaker sound almost second-rate. Listen to it at your own risk!"

Stereo Review Magazine

*The RTA Series*



RTA 11t

*"They provide smooth, fast and incredibly well detailed sound."*



## "Polk's RTA Tower Loudspeakers Combine Legendary Polk Performance with Contemporary Style."

*Big speaker performance with an efficient use of space.*

### RTA 11t

The RTA 11t is the finest conventional (non-SDA) speaker that Polk Audio manufactures. Its extremely high power handling (250 watts) and high efficiency (90dB) provide remarkable dynamic range from both large and small amplifiers. The RTA 11t utilizes the same technologically advanced fluid-coupled subwoofer design found in Polk's flagship model. Dual 8" sub-bass radiators are coupled to two 6½" mid/bass drivers, resulting in a fast, powerful, deep, and ultra-accurate bass response, without the boomy, undetailed sound of large woofer systems.

### RTA 8t

In a slightly smaller package, the RTA 8t offers the same driver complement as the larger, more expensive RTA 11t, and thus shares its benefits of superior imaging, musicality, and detail.

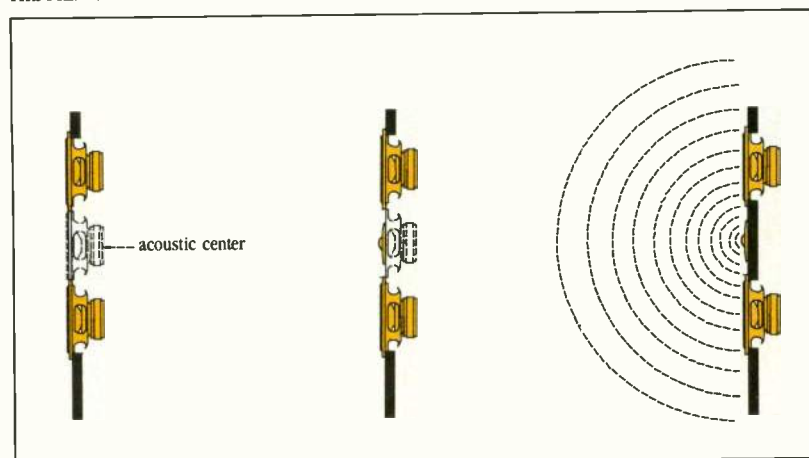
Both Polk RTA series loudspeakers achieve the extremely rare combination of good looks and state-of-the-art performance. The tall, elegantly slender and deep "tower" design cabinets allow for substantial internal volume for high efficiency and powerful bass, but only require less than one square foot of floor space! The small baffle surface area around each driver minimizes diffraction (sonic reflections), thereby insuring outstanding imaging and low coloration.

Positioning the 1" silver-coil dome tweeter between the two 6½" trilaminate polymer bass/midrange drivers achieves what is called "coincident radiation." This means that both the mid- and high-frequencies appear to radiate from the same place on the baffle resulting in perfect blending at the critical crossover point. (See illustration, below).

Polk RTA speakers have an uncanny ability to perfectly reproduce the human voice, pianos, guitars, and every other instrument whose faithful reproduction demands superlative midrange and high-frequency performance. Bass and percussion instruments are accurately reproduced with full visceral power and realism, without the heaviness, boominess, or lack of detail that plague lesser designs.

The discriminating listener who seeks state-of-the-art performance and design will find the quintessential combination of both in Polk's RTA series loudspeakers.

### THE PRINCIPLES OF COINCIDENT RADIATION



The perceived source of sound of two identical drivers is centered in the area between them.

In the Polk RTA loudspeaker, the tweeter is positioned at the acoustic center of the drivers.

Drivers and tweeter appear to operate together as an ideal point source resulting in precise imaging, uniform dispersion and startling midrange accuracy.



Polk Audio's RTA 8t and RTA 11t High Performance Tower Speakers

*The Monitor Series*



Monitor 10B

*"The best high performance speaker value on the market today."* Off The Record



## "Polk's Remarkable Monitors Redefine Incredible Sound/Affordable Price"

*"At their price, they're simply a steal"* Audiogram Magazine

### Monitor 10B

One of the world's best sounding loudspeakers, and in the words of Audiogram magazine, "At the price they are simply a steal." The Polk 10B utilizes dual trilaminate polymer drivers, a 1" dome tweeter coupled with a built-in subwoofer for accurate bass response and superior high frequency clarity.

### Monitor 7C

Basically a smaller, less expensive version of the Monitor 10B. By offering superlative performance whether mounted on a shelf or a speaker stand, the 7C is a highly versatile addition to any audio system. How good does it sound? Audio Alternative magazine said, "It is amazing."

### Monitor 5B

Similar in design and performance to the Monitor 7C, however it utilizes an 8" subwoofer (rather than 10") and is more compact. The 5B represents one of the best values of the entire Monitor Series.

### Monitor 5Jr. +

Called the best sounding speaker of its price in the world regardless of size. It achieves life-like three-dimensional imaging which 10 years ago was not available in any bookshelf speaker at any price.

### Monitor 4.5

Shares most of the high technology components and rewarding musical performance of the larger Polk speakers at a surprisingly low price. A critically tuned bass duct insures high efficiency and great bass performance despite its convenient compact design.

### Monitor 4A

Identical to the 4.5 in a smaller cabinet. Audio critic Lawrence Johnson called it, "an all around star of great magnitude." The 4A's affordable price means that no matter how small your budget, you can afford the incredible sound of Polk!

### Matthew Polk's Vision: Superior Sound for Everyone

Polk Audio is an American company that was founded in 1972 by three Johns Hopkins University graduates who were fanatical audiophiles with a common vision. They believed that it was possible to make speakers that performed as well as the most exotic and expensive systems at a fraction of the price. Starting with only \$200, they began by designing and manufacturing the Monitor Series loudspeakers. The Monitor Series combined the advantages of American high technology and durability with European styling and refinement. Over the years an unending stream of rave reviews, industry awards, and thousands of enthusiastic Polk customers have established the Monitor Series as the choice for those looking for both incredible sound and an affordable price. There is no better value in audio equipment today than a Polk Monitor series loudspeaker.

### Uncompromising Standards at Every Price

A limited budget does not mean a limited ability to appreciate fantastic sounding music. That's why we put our best engineering efforts and only the finest materials into every Polk product regardless of price.

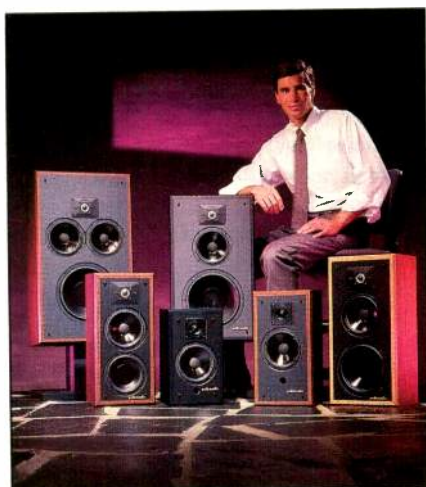
Every Polk Monitor Series speaker uses the same trilaminate polymer cone technology as the flagship SDA-SRS 1.2. Every Polk Monitor utilizes a 1" polymer dome tweeter, and most use exactly the same tweeter found in the SRS 1.2. All Polk Monitors employ costly multi-component crossover networks and ¾" thick high density, non-resonant cabinets. Pick up a Polk Monitor 4A, then pick up a comparably priced but larger speaker from a different manufacturer. You'll notice that the Polk is heavier, more solidly built and sports a superior fit and finish. Now compare the sound. We are sure you'll agree with Musician magazine, which said Polk Monitors are: "Vastly superior to the competition."

### The Thrilling Sound of Polk Monitors

Polk Monitors achieve open, boxless, three-dimensional imaging surpassed only by the SDA's. Their silky smooth frequency response assures natural, non-fatiguing, easy to listen to sound, while their fast transient response results in music that is reproduced with life-like clarity and detail. In addition, dynamic bass performance, ultra-wide dispersion, high efficiency and high power handling are all hallmarks of Monitor Series performance.

### There is a Polk Monitor Perfect for You

Each time you advance through the six Monitor Series models, you'll immediately hear a remarkable improvement in efficiency, bass response, and output volume. They are designed so that a smaller Polk played in a small room will sound nearly identical to a larger Polk played in a large room. A larger Polk in a small room will, of course, play that much louder with even better bass. No matter what price range fits your budget, there is a spectacular Polk Monitor Series speaker waiting to fulfill your sonic dreams.



Matthew Polk with his incredible sounding/affordably priced Monitor Series loudspeakers. Front row (L to R) Monitor 5Jr. +, Monitor 4A. Monitor 4.5, Monitor 5B Back row (L to R) Monitor 10B, Monitor 7C

## The Monitor Series

### "Vastly Superior to the Competition"

Musician Magazine

*"Other comparably priced speakers simply do not come close"*

Audiogram Magazine

The Monitor Series

*"Open, uncolored, perfectly imaged sound"* Musician Magazine

**"We at Musician have found the Polk Audio Monitor speakers so vastly superior to the competition in their price range we felt we had to pass the information along..."** The design produces a remarkably well integrated and coherent sound that adapt itself ideally to all kinds of music...the kind of open, uncolored, perfectly imaged sound we thought began at twice the price and required huge amounts of amplification...will benefit from state-of-the-art electronics, but sound quite magnificent with a good mid powered popular brand receiver...they make the other popular speakers in their price range seem dim, colored, boxy and just plain insufficient. If you're shopping for stereo, our advice is not to buy speakers until you've heard the Polks."

Musician Magazine



Monitor 10B



Monitor 4.5



*"Outstanding... highly recommended"*

Complete Buyer's Guide to Stereo/Hi Fi Equipment

**"Sound beyond what would be expected...highly recommended..."** Polk Audio Monitor Series speakers enjoy an enviable reputation among audiophiles who don't have the golden wallet to match their golden ears...designed to appeal to the most critical audiophiles and those audiophiles have embraced them warmly...outstanding loudspeakers...deciding high end sonic characteristics...unusually pure sound. It's clear that Polk came by their excellent reputation honestly."

Complete Buyer's Guide to Stereo/Hi Fi Equipment

Monitor 10B

*"Superior sound"*

Stereo Review Magazine

**"Polk offers an uncommon amount of superior sound at a moderate price...Open, boxless, three dimensional quality..."** We probably would have chosen these adjectives ourselves to describe the sound of the Model 10, but Polk has spared us the chore...the combination of good "sound sense" and a high degree of technical expertise and sophistication has resulted in some truly noteworthy products...It is easy to appreciate the advantages of using a pair of small diameter (but long throw) woofers that can radiate much of the midrange as well as the upper and mid-bass frequencies. Avoiding a crossover in the midrange (the most audibly important part of the musical spectrum) is the best way to eliminate or minimize many of the colorations that have been attributed to crossover networks. The dispersion of the one inch tweeter is exceptional...the transient response of the Model 10 is absolutely first-rate, and the hemispherical dispersion is superb (we cannot recall measuring better dispersion on any forward radiating speaker)...the speaker sensitivity is adequate for use with a 10-watt amplifier, yet it could absorb the full output of a 200-watt amplifier without damage...exceptionally pleasing sonic balance."

Stereo Review Magazine

*"At their price, they are simply a steal"*

Audiogram Magazine

**"When we heard the Polk Speakers at the CES show we were so impressed we could not believe the prices. The sound coming forth from the Model 10 Monitors is something really special.** It is a sound that is open, well defined and very low in coloration. One does not generally expect such low coloration in a modestly priced box speaker, and certainly not anything like the definition exhibited by these speakers. How does Polk do it? We think it is mostly execution. They hear very well and they care...Other comparably priced speakers simply do not come close to the standards set by the Model 10...at their price they are simply a steal."

Audiogram Magazine



### Monitor 7C

*"It is amazing"*

Stereo Buyer's Guide

**"We have found something very special. The Polk 7. It is amazing... Hundreds of manufacturers build loudspeakers but only a few in this price range really perform. The Polk 7's performance!... The bottom end of the**

**Polk 7's is tight, fast and can actually reproduce a cello without making it sound like an electric bass... It is sturdily built and attractive. Technically the Polk 7 is a superior loudspeaker in its class. Frequency response is exceptionally flat... Horizontal dispersion is so good that you can stand in front of one 7 and hear the other!... Vertical dispersion is also excellent... It is apparent that this speaker is a real find."**

Stereo Buyer's Guide



Monitor 7C



Monitor 5B

### Monitor 4A

*"Star of great magnitude"*

Milwaukee Sentinel

**"The Polk 4 creates a startling illusion of an elevated stage... the stronger and better quality the signal we fed them the more spectacular the image that blazed up... All of that would be remarkable enough if we were discussing loudspeakers in the \$1000 range. The Polk 4 carries a retail price of under \$200 a pair. In actual use the Polk 4 is an all around star of great magnitude. Not only do high frequencies shine to the farthest reaches of hearing, but musical textures and colors in that stratosphere come through finely controlled and proportioned. And don't be misled by Polk's modest claim for bass response... its low register shows ample depth and clarity. At high listening levels, these pixie Polks deliver the massive brass sonorities of Mahler's Third Symphony with incredible energy, textured pliancy and most significant, transparency. Factors of presence and stereo imaging proved just as amazing. Yet the Model 4 doesn't have to be whipped to excel... Late one night, we sat down to a quiet hour of folk music... and experienced the same thrilling detail and immediacy."**

Milwaukee Sentinel



### Monitor 5B

*"We were very impressed"*

Stereo Buyer's Guide

**"It's a medium-sized bookshelf unit brimming with the latest in Polk speaker technology... excellent sonic balance and a dynamic capability rarely found in a speaker of this size... Bass was well extended and excellent in terms of sonic quality, while the midrange was clean and very detailed... treble was extended and shimmering... the stereo stage was palpable and extremely defined... the frequency responses (sine wave and pink noise) were very flat... add to this the versatility of the unit with regard to room placement, plus the Polk reputation for reliability and it's hard to beat."**

Stereo Buyer's Guide



Monitor 5jr. +

## *The Mobile Monitor Series*

# **"Polk's Mobile Monitors Sound Like the Finest Home Speakers"**

*"Built Tough to Withstand the Rigors of the Road"*

Now you don't have to compromise your home audio standards when listening to music in your car. Polk Audio's engineers have brought the same amazing quality, technology and innovation of the Grand Prix Award winning Polk home speakers to your automobile. Not surprisingly, two of the Polk Mobile Monitor designs (the MM 10A and MM 6900) have already won Autosound Grand Prix Speaker of the Year awards.

Polk Mobile Monitor automotive systems sound extraordinary. They are silky smooth and perfectly balanced, with deep, accurate bass performance that leaves the "boom, crash, tinkle" of typical car speakers in the dust. Even at the loud volume levels so often required on the road, Polk Mobile Monitors are non-fatiguing and easy to listen to. Borrowing the same trilaminate polymer cone and dome tweeter technologies developed for the highly acclaimed Polk home Monitor Series, the Mobile Monitors provide unequalled clarity and the awesome power required to effortlessly resolve every musical detail even over road noise.

### **Spectacular SDA Imaging Hits the Road!**

Now you can experience the accuracy and excitement of live-sound imaging in your car by installing a Polk SDA Mobile Monitor system. An SDA crossover matrix used in conjunction with 2 pairs of Mobile Monitor speakers (front and rear) literally expands the boundaries of the automotive listening environment.

The SDA Mobile Monitor system solves the acoustic shortcomings of automotive interiors and car stereos. First, by cancelling interaural crosstalk distortion, the SDA system frees you from the feeling that you are listening inside a small box. The sound is open, spacious, and three dimensional, as if you were listening in a concert hall. Second, the sound stage is maintained in front of you as it would be in real life, rather than from behind as with conventional autosound systems. Third, excellent bass response is sustained by means of Polk's exclusive Sub-Bass Drive circuit. Of the Polk SDA Mobile system, Car Stereo Review said, "Polk has triumphed... It's like jumping into hyperspace."

### **A Mobile Monitor System for Every Car**

Given the wide variety of vehicles on the road and the myriad of placement options, Polk Mobile Monitors are available in many configurations to suit practically any installation. Your Polk dealer can help you choose the system that's right for your car. Go ahead, push the envelope. Doesn't your car deserve the best?



SDA ACM



MM 5503



MM 6503



MM 6903





**polkaudio**  
The Speaker Specialists®



**MM 6930**



**MM 10a**



**MM3a**



**MM1a**



**MM 1025**

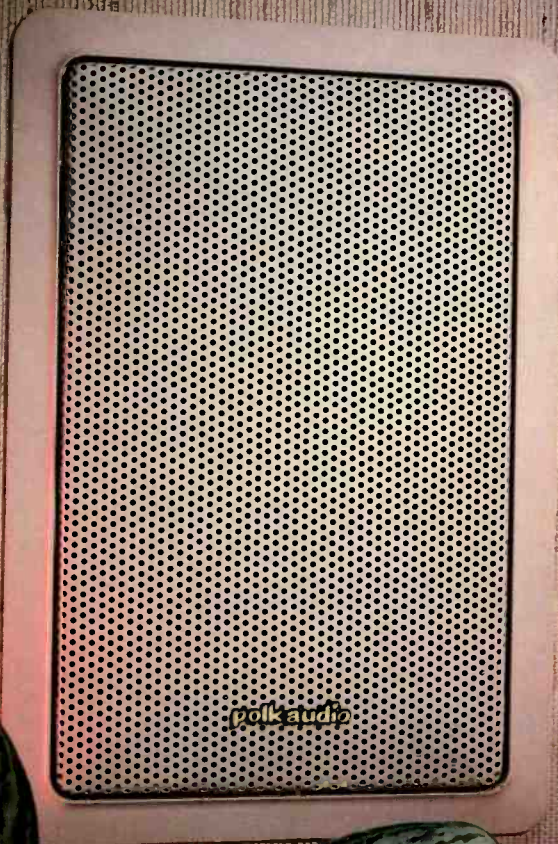
Enter No. 78 on Reader Service Card



## *The Architectural Reference Built-in Loudspeaker*

### **"Polk's Architectural Reference Loudspeakers Designed to be Heard — Not Seen"**

Now you can enjoy the incredible sound of Polk loudspeakers in every room of your home without using any floor or shelf space to do so. Polk's Architectural Reference loudspeaker systems mount easily into any wall, ceiling or surface for easy installation in virtually any location in your home. Additionally, the same advanced driver and crossover technology is used from our finest bookshelf speaker systems in incredibly small, inconspicuous packages. In fact, the AB-700 is the smallest speaker of its type that uses a full 6 1/2" woofer. Both the AB-700 and the AB-800 can be mounted in any material ranging in thickness from 1/2" to several inches and can be accommodated in either new or existing construction. All Polk architectural reference loudspeaker systems are supplied in an off-white finish with grills that can be painted to blend in with any wall. Bring the joys of music into every room of your home with the incredible Polk architectural loudspeaker systems.



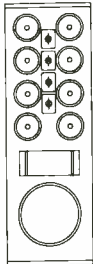


# Specifications

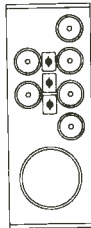
Your Choice of Many Beautiful Cabinet Finishes:

The SDAs are available in a beautiful hand-oiled oak or walnut finish. All other models come standard in furniture grade walnut, oak or black woodgrain vinyl. Polk stands are shown in the photographs and are recommended, but optional.

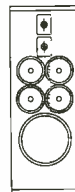
These specifications are offered to help in comparing the various Polk models with each other. Polk Audio uses many unique testing methods in the design and evaluation of its products. Remember, *there is no accepted standard method for testing loudspeaker systems*. As a result, our published specifications may be more conservative than those published by other speaker manufacturers. Virtually all audio experts agree that no set of measurements can adequately describe the *sound* of any loudspeaker. The best way to choose the speaker that is right for you is to take your favorite recordings to your nearest Polk dealer and hear them for yourself. The rule of thumb is simply to trust your own ears.



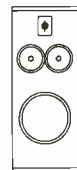
**SRS 1.2 II**  
Four 1 inch dome tweeters  
Eight 6-1/2 inch drivers  
One 15 inch fluid-coupled subwoofer  
63-1/2H x 21-3/4W x 13-1/8D  
10Hz-26kHz  
27Hz-20kHz  
50-1000 watts/channel  
6 ohms  
91 dB



**SRS 2.3 II**  
Three 1 inch dome tweeters  
Six 6-1/2 inch drivers  
One 15 inch fluid-coupled subwoofer  
55H x 20-5/8W x 13-1/8D  
12Hz-26kHz  
30Hz-20kHz  
50-750 watts/channel  
6 ohms  
90 dB



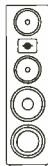
**SDA-1C**  
Two 1 inch dome tweeters  
Four 6-1/2 inch drivers  
One 12 inch fluid-coupled subwoofer  
44H x 16-9/16W x 11-1/2D  
15Hz-26kHz  
35Hz-20kHz  
50-500 watts/channel  
6 ohms  
90 dB



**SDA-2B**  
One 1 inch dome tweeter  
Two 6-1/2 inch drivers  
One 12 inch fluid-coupled subwoofer  
40-1/4H x 16-9/16W x 11-1/2D  
20Hz-26kHz  
38Hz-20kHz  
30-350 watts/channel  
6 ohms  
89.7 dB



**SDA-CRS+**  
One 1 inch dome tweeter  
Two 6-1/2 inch drivers  
One 10 inch fluid-coupled subwoofer  
12-3/4H x 20W x 10-1/8D  
25Hz-26kHz  
42Hz-20kHz  
30-200 watts/channel  
6 ohms  
89.5 dB



**RTA 111**  
One 1 inch dome tweeter  
Two 6-1/2 inch drivers  
Two 8 inch fluid-coupled subwoofers  
39H x 10-1/2W x 14-1/2D  
22Hz-26kHz  
29Hz-20kHz  
30-250 watts/channel  
6 ohms  
90 dB



**RTA 81**  
One 1 inch dome tweeter  
Two 6-1/2 inch drivers  
33-1/2H x 9W x 11-1/2D  
30Hz-26kHz  
42Hz-20kHz  
20-250 watts/channel  
6 ohms  
89.5 dB



**Monitor 10B**  
One 1 inch dome tweeter  
Two 6-1/2 inch drivers  
One 10 inch fluid-coupled subwoofer  
28H x 16W x 11-1/2D  
25Hz-26kHz  
57Hz-20kHz  
20-250 watts/channel  
6 ohms  
89 dB



**Monitor 7C**  
One 1 inch dome tweeter  
One 6-1/2 inch driver  
One 10 inch fluid-coupled subwoofer  
24H x 14W x 9-5/8D  
25Hz-26kHz  
40Hz-20kHz  
20-150 watts/channel  
6 ohms  
89 dB



**Monitor 5B**  
One 1 inch dome tweeter  
One 6-1/2 inch driver  
One 8 inch fluid-coupled subwoofer  
21-5/8H x 10-9/16W x 9D  
30Hz-26kHz  
43Hz-20kHz  
20-125 watts/channel  
6 ohms  
90 dB



**Monitor 5jr+**  
One 1 inch dome tweeter  
One 6-1/2 inch driver  
One 6-1/2 inch fluid-coupled subwoofer  
19-1/2H x 9W x 9D  
30Hz-26kHz  
48Hz-20kHz  
20-125 watts/channel  
6 ohms  
91 dB



**Monitor 4.5**  
One 1 inch dome tweeter  
One 6-1/2 inch driver  
17H x 9W x 9D  
30Hz-25kHz  
50Hz-20kHz  
20-100 watts/channel  
6 ohms  
91 dB



**Monitor 4A**  
One 1 inch dome tweeter  
One 6-1/2 inch driver  
14-1/4H x 8-1/2W x 7-3/8D  
35Hz-25kHz  
55Hz-20kHz  
20-100 watts/channel  
6 ohms  
91 dB



**SDS 400**  
One 1 inch dome tweeter  
One 6-1/2 inch driver  
14-1/4H x 8-1/2W x 7-3/8D  
35Hz-25kHz  
55Hz-20kHz  
20-100 watts/channel  
6 ohms  
91 dB



**AB 700**  
One 1 inch dome tweeter  
One 6-1/2 inch driver  
10-3/8H x 7-1/8W  
Cutout size 9-3/4H x 6-1/4 W  
Mounting depth 3 in. minimum  
30Hz-26kHz  
55Hz-20kHz  
10-125 watts/channel  
6 ohms  
90 dB



**AB 800**  
One 1 inch dome tweeter  
Two 6-1/2 inch drivers  
16-3/8H x 7-1/8W  
Cutout size 15-1/2H x 6-1/4W  
Mounting depth 3 in. minimum  
28Hz-26kHz  
45Hz-20kHz  
10-150 watts/channel  
5 ohms  
91 dB

**Driver Complement**

**Size (Inches)**  
**Overall Frequency Response**  
— 3dB limits  
**Rec. Amplification**  
**Nominal Impedance**  
**Efficiency**

**Driver Complement**

**Size (Inches)**  
**Overall Frequency Response**  
— 3dB limits  
**Rec. Amplification**  
**Nominal Impedance**  
**Efficiency**

**Driver Complement**

**Size (Inches)**  
**Overall Frequency Response**  
— 3dB limits  
**Rec. Amplification**  
**Nominal Impedance**  
**Efficiency**


















**Driver Complement**

**Size (Inches)**

**Overall Frequency Response**  
— 3dB limits  
**Rec. Amplification**  
**Nominal Impedance**  
**Efficiency**

# Mobile Monitor Specifications

Efficiency measured @ 1 watt/5 meters

|   |   |   |  |  |   |
|---|---|---|--|--|---|
|  <b>MM1a</b><br>4 inch full range<br><br>3-3/4" Diam.<br><br>1-3/8<br>80Hz-15,000 Hz<br>5-50 watts/channel<br>4 Ohms<br>96 db              |  <b>MM3a</b><br>5-1/4 inch coaxial<br><br>4-7/8" Diam.<br><br>2-1/4<br>40-20,500 Hz<br>5-75 watts/channel<br>4 Ohms<br>93 db                 |  <b>MM 10a</b><br>6-1/2 inch coaxial<br><br>5-3/8" diameter<br><br>2-5/8<br>38-20,500 Hz<br>5-150 watts/channel<br>4 Ohms<br>94 db   |  <b>MM 3500</b><br>3-1/2 inch full range<br><br>3-1/4" diameter<br><br>1-1/2<br>120-17,000 Hz<br>5-50 Hz<br>4 Ohms<br>94 db   |  <b>MM 4600</b><br>4 x 6 full range<br><br>5-5/8 x 3-3/4 oval<br><br>2<br>75-15,000 Hz<br>5-50 watts/channel<br>4 Ohms<br>96 db   |  <b>MM 4</b><br>Plate type with 1/2 inch tweeter and 5-1/4 inch woofer<br>4" Diam.<br><br>1-1/2<br>40-20,500 Hz<br>5-75 watts/channel<br>4 Ohms<br>91 db                                       |
|  <b>MM 6920</b><br>6 x 9 inch coaxial<br><br>8-3/4 x 5-7/8 over<br><br>3-1/8<br><br>34-20,500 Hz<br>5-150 watts/channel<br>4 Ohms<br>95 db |  <b>MM 6930</b><br>6 x 9 inch three way<br><br>8-3/4 x 5-7/8 over<br><br>3-1/8<br><br>34-20,500 Hz<br>5-150 watts/channel<br>4 Ohms<br>95 db |  <b>MM 5503</b><br>5-1/4 inch three-way two-piece system<br>4-7/8" Diam.<br><br>MF/HF — 4-1/4 x 2-1/2 (flush)<br>4-5/8 x 2-3/4 (behind panel)<br>LF — 3-1/8, MF/HF — 1<br>34-20,500 Hz<br>5-150 watts/channel<br>4 Ohms<br>93 db |  <b>MM 6503</b><br>6-1/2 inch three-way two-piece system<br>LF — 5-3/8" diam.<br><br>MF/HF — 4-1/4 x 2-1/2 (flush)<br>4-5/8 x 2-3/4 (behind panel)<br>LF — 2-5/8, MF/HF-1<br>34-20,500 Hz<br>5-150 watts/channel<br>4 Ohms<br>94 db |  <b>MM 6903</b><br>6 x 9 inch three way two-piece system<br>LF — 8-3/4 x 5-7/8 oval<br><br>MF/HF — 4-1/4 x 2-1/2 (flush)<br>4-5/8 x 2-3/4 (behind panel)<br>LF — 3-1/8, MF/HF<br>34-20,500 Hz<br>5-150 watts/channel<br>4 Ohms<br>95 db |  <b>MM 2001</b><br>1/2 inch tweeter<br>2 inch midrange<br><br>4-1/4 x 2-1/2 (flush mount)<br>4-5/8 x 2-3/4 (panel mount)<br>1 inch<br>1,500-20,500 Hz<br>5-50 watts/channel<br>4 Ohms<br>95 db |
|  <b>MM 5501</b><br>5-1/4 inch woofer<br><br>4-7/8" Diam.<br>2-1/4 inch<br>40-1500 Hz<br>5-100 watts/channel<br>4 Ohms<br>93 db             |  <b>MM 6501</b><br>6-1/2 inch woofer/subwoofer<br>5-3/8" diam.<br>2-5/8 inch<br>38-1500 Hz<br>5-150 watts/channel<br>4 Ohms<br>94 db         |  <b>MM 6901</b><br>6 x 9 inch woofer/subwoofer<br>3-1/8 inch<br>34-1500 Hz<br>5-150 watts/channel<br>4 Ohms<br>95 db   |  <b>MM 8001</b><br>8 inch subwoofer<br>7-1/4" diam.<br>3-1/4 inch<br>30-1500 Hz<br>10-150 watts/channel<br>4 Ohms<br>95 db  |  <b>MM 1025</b><br>10 inch subwoofer<br>9-1/4" diam.<br>4-3/8 inch<br>25-1000 Hz<br>10-200 watts/channel<br>4 Ohms<br>95 db   |   |

## Where to buy Polk Speakers

### AUTHORIZED HOME DEALERS

**CANADA** Call Evolution Technology, Toronto for nearest dealer 1-416-847-8888  
**AK Anchorage:** Magnum Electronics • Fairbanks: Holt's  
**AL Birmingham:** Audition • Dothan: International Audio • Huntsville: Sound Distributors • Mobile: Hi Fi Zone • Montgomery: The Record Shop • Tuscaloosa: Kincaid Stereo & TV  
**AR Fayetteville:** FL Smith: Stereo One • Little Rock: Leisure Coast Audio Video • Searcy: Soltman  
**AZ Phoenix/Mesa:** Hi Fi Sales • Tucson: Audio Emporium • Yuma: Warehouse Stereo  
**CA Bakersfield:** Casa Moore • Campbell: Sound Goods • Canoga Park: Shelley's • Carpinteria: Creative Stereo • Chico: Sounds By Dave • Corona Del Mar: Pacific Coast Audio Video • Escondido: Sound Company • Eureka: Eureka Audio Video • Lancaster: California Soundworks • Long Beach: Audio Concepts • Mountain View: Sound Goods • Napa: Futurvision • Orange: Absolute Audio • Penn Grove: California Stereo • Redondo: Systems Design • Riverside: Speakercraft • Sacramento: Good Guys • San Diego: Sound Company • San Francisco & Suburbs: Good Guys, Performance Audio • San Gabriel: Audio Concepts • San Jose: Good Guys • San Luis Obispo: Audio Ecstasy • Santa Barbara: Creative Stereo • Santa Cruz: Sound Wave • Santa Maria: Creative Stereo • Santa Monica: Shelley's Stereo • Stockton: Gluskins • Thousand Oaks: Creative Stereo • Upland: Audio Haven • Ventura: Creative Stereo • Victorville: Incredible Sounds • Visalia: Metro Stereo • Westminster: Videotek Stereo  
**CO Boulder:** Soundtrack • Colorado Springs: Sunshine Audio • Denver & Suburbs: Soundtrack • Greenwood Springs: Stereo Unlimited • Grand Junction: Sound Company • Minturn: Custom Audio Video • Pueblo: Sunshine Audio  
**CT Avon:** Hi Fi Stereo House • Danbury: Carlson's • Fairfield: Audio Design • Greenwich: Al Franklin's • Hartford: Al Franklin's • New Haven: Audio Etc. • Newington: Hi Fi Stereo House • New London: Robert's • Norwalk: Audiotronics • Waterbury: Zinno Music  
**DE Wilmington:** Bryn Mawr Stereo  
**FL Daytona Beach:** Stereotypes • Ft. Myers: Stereo Garage • Ft. Lauderdale: Sound Advice • Ft. Pierce: Sound Shack • Ft. Walton Beach: Audio International • Gainesville: Electronics World • Jacksonville: Audio Tech. Spectrum Home Theater • Key West: Audio International • Lakeland: Sound Factory • Mary Esther: Palm Audio Video • Merritt Island: Southern Audio • Miami: Electronic Equipment Co., Sound Advice • Naples:

Stereo Garage • Panama City: Wattsound Stereo • Pensacola: All Pro Sound • Sunrise: Sound Advice • St. Petersburg: Cooper for Stereo, Sound Advice • Tallahassee: Stereo Store • Tampa: Sound Advice • W. Palm Beach: Electronic Connection, Sound Advice  
**GA Athens:** Hi Fi Buys • Atlanta & Suburbs: Hi Fi Buys • Augusta: Stereo City • Brunswick: H&H Service Store • Columbus: Merit TV • Gainesville: Audio Dimensions • Macon: Georgia Music • Savannah: Audio Warehouse • Valdosta: Stereo Connection  
**HI Honolulu:** Honolulu Audio Video  
**IA Davenport:** Grigg's Music • Des Moines: Audio Labs • Dodge City: Sound World • Dubuque: Reniers Iowa City: Hawkeye Audio • Mason City: Sound World • Sioux City: Audio Visions • Waterloo: Team  
**ID Boise:** Stereo Shoppe • Moscow: Stereo Shoppe • Sandpoint: Electracraft • Twin Falls: Audio Warehouse  
**IL Alton:** Reliable Stereo • Aurora: Stereo Systems • Carbondale: Southern Stereo • Champaign: Good Vibes • Chicago & Suburbs: United Audio • Decatur: Team Electronics • Highland Park: Columbia • Joliet: Stereo Systems • Kankakee: Bartlett's Entertainment • Naperville: Stereo Systems • Normal: Sundown One • Peoria: Team Electronics • Rockford: Columbia • Springfield: Sundown One • Springfield Valley: Audio Labs • Sterling: Sterling Electronics  
**IN Bloomington:** Campus Audio • Bluffton: Eley TV & Appliance • Evansville: Ristley's • Ft. Wayne: Classic Stereo • Indianapolis: Ovalton • Lafayette: Good Vibes • Marion: Classic Stereo • Michigan City: Audio Connection • Muncie: Classic Stereo • South Bend: Classic Stereo • Terre Haute: Stereo Crafters  
**KS Junction City:** Audio Junction • Kansas City: Brands Mart • Overland Park: Audio Electronics • Nelsons Mart • Wichita: Audio Visions • Topeka: Brands Mart  
**KY Bowling Green:** Audio Center • Lexington: Sound Electronics • Louisville: Audio Video Buy Design • Owensboro: Paducah: Ristley's • Pikeville: Mayo Inc.  
**LA Alexandria:** Simpson Electronics • Lafayette: Sound Electronics • Metairie & New Orleans: Alternan Audio  
**MA Boston:** Goodwins, Waltham Camera & Stereo • Fitchburg: Fitchburg Music • N. Dartmouth: Sound Inc. • Pittsfield: H.B.S. Stereo • Worcester: O'Connell  
**ME Bangor:** Sound Source • Camden: Harbor

Audio • Portland: New England Music  
**MD Baltimore:** Soundscape • Gaithersburg: Audio Buys  
**MI Ann Arbor:** Hi Fi Buys • Birmingham: Almas Hi Fi • Dearborn: Almas Hi Fi • Farmington Hills: Almas Hi Fi • Flint: Stereo Center • Grand Rapids: Classic Stereo • Iron Mountain: Sound North • Kalamazoo: Classic Stereo • Lansing: Midland: Hi Fi Buys • Petoskey: Kurtz Music • Saginaw: Court St. Listening Room • Traverse City: Kurtz Music  
**MN Alexandria:** Sound Shop • Duluth: Mel's TV & Audio • Mankato: Audio King • Minneapolis & Suburbs: Audio King • Rochester: Audio King • St. Paul: Audio King  
**MO Cape Girardeau:** Stereo One • Columbia: Johnston Audio • Kansas City: Brands Mart • St. Louis: Sound Central  
**MS • Hattisburg:** McLelland TV • Jackson: Hooper's • Pascagoula: Empress  
**MT Billings:** Video Sat & Sound • Bozeman: Thrifty Ear • Great Falls: Rocky Mountain Hi Fi • Kalispell: Audio Visions • Missoula: Aspen Sound  
**NC Boone:** Holtons • Chapel Hill: Stereo Sound • Charlotte: Audio Video Systems • Concord • Tri-City • Greensboro: Stereo Sound • Hendersonville: Pro Sound • Kinston: Stereo Concepts • Moorehead City: Anderson Audio • New Bern: Anderson Audio • Raleigh: Audio Buys, Stereo Sound • Rocky Mount: Microwave Audio • Wilmington: Atlantic Audio • Wilson: Modern Stereo • Winston-Salem: Stereo Sound  
**ND Bismarck:** Pacific Sound • Fargo: Today Electronics  
**NE Kearney:** Midwest Audio • Lincoln: Stereo West • Omaha: Stereo West • York: Midwest Audio  
**NH Concord:** Audio of New England • Laconia: Lakeside Stereo • North Hampton: The New Audiophile • Salem: Cuomo's  
**NJ East Brunswick:** Atlantic Stereo • Maple Shade: Bryn Mawr Stereo • Montclair: Parde Radio • Paramus: Harvey Electronics • Raritan: AC Audio • Ridgewood: Soundboard • Shrewsbury: Monmouth Stereo • Toms River: Rands Camera • Wall Twp.: Monmouth Stereo • West Caldwell: Perdue Radio  
**NM Alamogordo:** D&K Electronics • Albuquerque: West Coast Sound • Carlsbad: Beason's • Clovis: Towne Crier • Santa Fe: West Coast Sound  
**NV Elko:** Elko Audio • Las Vegas: Upper Ear • Reno: Good Guys • South Shore Lake Tahoe: Audio Video Den

**NY Albany:** Clark Music, Sounds Great • Amherst: Speaker Shop • Batavia: Unicorn Audio • Buffalo: Speaker Shop • Corning: Chemung • Elmira: Chemung • Fredonia: Studio One • Glens Falls: Audio Genesis • Gothen: Longplayer's Stereo • Ithaca: Chemung Sound Image • Jamestown: Studio One • Manassett: Audio Breakthroughs • Massena: Hi Fi Shop • Newburgh: Audio Expressions • New Hartford: Adirondack Music • New York City: Audio Breakthroughs, Electronic Workshop, Harvey Electronics • Plattsburgh: Alpha Stereo • Rochester: JB Sound • Scarsdale: Listening Room • Syracuse: Clark Music • Vestal: Hart Electronics • White Plains: Harvey Electronics • Woodbury: Audio Breakthroughs  
**OH Akron:** Audio Craft • Canton: Belden Audio • Cleveland & Suburbs: Audio Craft • Cincinnati: Stereo Lab • Columbus: Stereo Lab • Dayton: Stereo Showcase • Findlay: Audio Craft • Lima: Classic Stereo • Toledo: Audio Craft  
**OK Lawton:** Hi Fi Shop • Oklahoma City: Audio Dimensions • Shawnee: Rave Sounds • Stillwater: Cartlins • Tulsa: Audio Advice  
**OR Eugene:** University Hi Fi • Grants Pass: Shekells • Medford: Shekells • Salem: Kellys Home Center  
**PA Allentown:** Bryn Mawr Stereo • Blakely: Hart Electronics • Bryn Mawr: Bryn Mawr Stereo • Camp Hill: Bryn Mawr Stereo • Chambersburg: Sunrise Electronics • Erie: Studio One • Harrisburg: Bryn Mawr Stereo • Johnstown: Gary's Entertainment • Kingston: Hart Electronics • Lancaster: G'n'T Stereo • Longhorne: Bryn Mawr • Montgomeryville: Bryn Mawr Stereo • Natrona Heights: Stereo Land • Philadelphia & Suburbs: Bryn Mawr Stereo • Pittsburgh: Audio Junction • Quakertown: Bryn Mawr Stereo • Reading: G'n'T Stereo • Sellersburg: Stereo Shoppe • State College: Paul & Tony's Stereo • Stroudsburg: Main St. Audio Video • Westford: Audio Insight • Williamsport: Robert M. Sides  
**PR PUERTO RICO** Rio Piedras: Precision Audio  
**RI N. Providence:** Eastern Audio  
**SC Anderson:** Music Machine • Charleston: Audio Warehouse • Columbia: Music Machine • Greenville: Music Machine • Greenwood: Stereo

Shop • Spartansburg: Stereo Shop  
**SD Aberdeen:** Engel Music • Rapid City: Team Electronics • Sioux Falls: Audio King  
**TN Chattanooga:** R&R T.V. • Cookeville: Lindsey Ward • Jackson: New Wave Electronics • Kingsport: Audition • Knoxville: Lindsey Ward • McMinnville: Lindsey Ward • Memphis: New Wave Electronics • Nashville: Hi Fi Buys  
**TX Amarillo:** Audio Music • Corpus Christi: Sound Idea • Austin: Marcum Electronics • College Station: Audio Video • Corpus Christi: Tape Town • Dallas: Hillcrest Hi Fidelity • El Paso: Soundquest • Ft. Worth: Sound Idea • Houston: Sheffield Audio • Hurst: Sound Idea • Laredo: Metex International • Longview: Audio Techniques • Lubbock: Electronics Supercenter • McAllen: Metex • San Antonio: Mobile HiFi • San Marcos: Discovery Audio Video • Sherman: Worldwide Stereo • Temple: Audio Tech • Texarkana: Sound Towne • Victoria: Dyer Electronics • Waco: Audio Tech  
**UT Logan:** Stokes Brothers • Salt Lake City: Broadway Music • St. George: Boulevard Home Furnishings  
**VA Bristol:** Audition • Charlottesville: Holdens Sound Machine • Falls Church/Manassas: Audio Buys • Harrisonburg: Ace Music • N. Electronics • Richmond: Gary's Stereo • Roanoke: Holdens • Virginia Beach: Digital Sound  
**VT Brattleboro:** Scientific Stereo • Essex Junction: Creative Sound • Rutland: Mountain Music  
**WA Bellingham:** QC Stereo • Chelan: Music Stereo • Oak Harbor: QC Stereo Center • Seattle/Bellevue/Lynnwood: Magnolia • Spokane: Electracraft (H&S) • Tacoma: Magnolia  
**WI Appleton:** Sound World • Eau Claire: EME Audio Systems • Green Bay: Sound World • Lacrosse: Sound World • Madison: Happy Medium • Marinette: Sound Seller • Milwaukee: Audio Emporium • Oshkosh: Audio Plus • Wausau: Sound World  
**WV Barboursville:** Beckley, Charleston: Pied Piper • Clarkburg: Audio Visual Concepts • Huntington: Pied Piper, Video Warehouse • Piedmont: Sound Gallery • Wheeling: Stereo Lab  
**WY Cheyenne:** Electronics Unlimited • Gillette/Sheridan: Star Video Library

**polkaudio**  
The Speaker Specialists®

⊖ ELITE ⊖  
BY PIONEER







# END OF CONVERSATION.

Close your eyes, put on your favorite CD and listen. That's the best way to appreciate the natural, accurate musical reproduction of the new Elite TZ Series reference loudspeakers from Pioneer.

Designed by the same engineering team that developed Pioneer's renowned TAD studio monitors, the TZ Series speakers are designed to accommodate the extended dynamic range, superb clarity and depth of digital source materials.

Pioneer began by developing two entirely new diaphragm materials—ceramic graphite and ceramic carbon. These unique low-mass materials are used to construct midrange and high-frequency dome-type diaphragms that virtually eliminate spurious resonance while providing lightness, stiffness and excellent signal propagation speed. Now critical midrange frequencies and delicate highs will sound clearer and more natural than ever before.

To reproduce the extended low frequencies found on digital recordings, Pioneer developed a twin woofer system that packs a punch you'll feel as well as hear. Opposite-mounted bar-jointed

woofers placed in the center of the TZ's cabinet minimize standing waves while providing accurate low-frequency response to 20 Hz.

The cabinet of the 143-lb. TZ-9

is specially constructed, using 1" thick high-density board and a separate inner baffle that isolates the negative influence of low-frequency



Unique bar-jointed twin-woofer system.

vibration. Corners are specially rounded to eliminate diffraction and drivers are arranged for optimum sound-field intensity. The result is imaging and clarity that bring performances alive with smooth, true-to-life sound.

But enough conversation. If you're interested in hearing more about Pioneer's new TZ Series speakers, call 1-800-421-1404 for a technical white paper and the Elite dealer nearest you.

And let the speakers do the talking.



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Model shown: TZ-9. Also available: TZ-7.

# HOME IMPROVEMENT.







## THE ELITE™ PD-91 FULL 18-BIT CD PLAYER.

If you're still not completely satisfied with CD sound, if you have the nagging feeling something's still missing...you're right. 14-bit, 16-bit or even "floating" 18-bit CD players simply can't deliver all the rich potential of compact disc sound.

It's time for a little Home Improvement—a brilliant improvement at that.

Meet the Elite™ Series PD-91. The compact disc player that lets you hear CD sound in its fullest glory.

The PD-91 employs 8-times oversampling and full 18-bit linear twin D/A converters to yield an amazing 16-fold improvement in retrieval of ambient cues, harmonic detail and "air" around instruments and vocalists. It's an improvement so dramatic your ears will perk up instantly.

To build a player this superior demanded incredible attention to detail. Example: The PD-91's analogue circuitry is pure Class A for lowest distortion and highest musicality. Inside, you'd see four separate power supplies and eleven voltage regulators—to keep critical small-signal audio information free from interference.

To additionally minimize electrical interaction, portions of the PD-91's circuitry are defeat-able—like front panel illumination, headphone amplifier and the analogue output section when digital outputs are being used.

The PD-91 incorporates an outboard power transformer, Pioneer's exclusive copper-plated honeycomb chassis and special ceramic components to combat extraneous vibrations that can destroy signal integrity.

The PD-91's special linear motor delivers the world's fastest track access (1/2-second). You also get flexible seven-way programming, full random play, and, of course, full remote control. Optical as well as coaxial outputs make the PD-91 future-perfect as well.

Want instant Home Improvement in your music system? Then come treat your ears to the PD-91. For your nearest Elite dealer, call 1-800-421-1404.



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# THEY DON'T PLAY DIRTY.





## THE ELITE M-91 AND C-91 REFERENCE COMPONENTS.

Hum, crosstalk, vibration: distortion in your audio signal.

Graininess, specks, flecks: extraneous noise in your video image.

Impurities.

The Elite C-91 pre-amp and M-91 power amp are no-compromise components designed to give you more of the pure signal and less annoying noise. By keeping critical signal paths as short as possible. By providing honeycomb construction throughout to reduce excess vibration. By using separate twin cast-iron transformers to eliminate stray magnetic flux and dissipate heat quickly.

The C-91 not only controls up to six video components, its video-enhancing circuits actually improve your video image. You'll find unique processing controls like video noise reduction, sharpness and detail. To maintain audio and video signal purity, the C-91 includes a shielded, motorized volume control and three separate audio and video power transformers. There are also two Y/C inputs and three outputs to help you get the most out of the latest video technology, including SVHS™ and ED Beta®.

A sophisticated high-end A/V system wouldn't be complete without remote capabilities. The C-91's powerful Smart Remote™ unifies your existing components into a complete A/V system.

Where the C-91 takes off, the M-91 takes over. With 800 watts/channel into 2 ohms\* and 200 watts/channel into 8 ohms,\*\* and remarkably high current capability (47 amps) for driving low impedance reactive loads. And for unprecedented purity, the M-91 includes its own volume control for direct connection to your CD player.

The Elite M-91 and C-91 Reference Components. The difference between playing dirty. And playing great.

For more information, call 1-800-421-1404.



\*Measured by EIA method.  
\*\*Based on ETC rules regarding measurement of amplifier power ratings.  
Super VHS is a trademark of Victor Corporation of Japan, Limited.  
ED Beta is a registered trademark of Sony Corporation.  
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# THE ELITE REGISTER

## ALABAMA

Birmingham  
Audition, Inc.  
Huntsville  
Audio/Video  
Laboratory Inc.

## ALASKA

Anchorage  
Magnum Electronics

## ARIZONA

Phoenix  
Integrated Systems  
Jerry's Audio/Video  
Tucson  
Jerry's Audio

## CALIFORNIA

Alamo  
Laser Faire  
Alhambra  
Audio Video Center  
Berkeley  
Honker's Sound  
The Sounding  
Board, Inc.  
Beverly Hills  
Beverly Hills Audio  
Concord  
Sounding Board  
Fresno  
Banana's Hi Fi  
Gardena  
Laos Video & Sound  
Garden Grove  
Omega Stereo  
Glendale  
Marconi Radio  
Irvine  
Sound Quest, Inc.  
Los Angeles  
Gene's TV & Video  
Roberts Home  
Audio & Video  
Royal Sound  
Mill Valley  
Videola  
Mission Viejo  
Videolaser  
Monrovia  
Video Place  
Palo Alto  
Western Audio  
Imports  
Riverside  
Speakercraft  
Sacramento  
Paradyme  
San Bernardino  
Video Mart  
San Diego  
Convoy Audio Video  
Stereo Design  
San Francisco  
Videola  
Wong's Hi Fi  
San Jose  
Quement Electronics  
Santa Monica  
Jonas Miller Sound

Sherman Oaks  
Dave's Video  
Tustin  
Digital Ear  
Woodland Hills  
Lasers Edge  
Wilson Audio Video  
Entertainment

## COLORADO

Arvada  
Sweets R&T #2

## CONNECTICUT

Brookfield  
Sounds Incredible  
Danbury  
Sounds Alive  
East Hartford  
Hi Fi Image  
Greenwich  
Aud Vid  
Groton  
Leiser Sound, Inc.  
Newington  
Sound Playground  
Norwich  
Leiser Sound, Inc.  
Orange  
Sounds Alive  
Stamford  
Sounds Alive  
Waterbury  
Zinno Music  
West Haven  
Premiere Electronics  
Westport  
Sounds Alive

## DISTRICT OF COLUMBIA

Washington  
Myer-Emco

## FLORIDA

Altamonte Springs  
Boss Audio  
Boca Raton  
Vern's Electronics  
Fort Meyers  
Fort Meyers  
Auto Sound  
Miami  
AAAA World  
Import Export  
Audio Coll  
Audio Plus  
Overseas Electronics  
Ormand Beach  
Electronic  
Environments  
Pinellas Park  
Cooper For Stereo  
Stuart  
Sound & Vision

## GEORGIA

Atlanta  
Stereo Video  
Design, Inc.

Marietta  
Entertainment  
Environments

## HAWAII

Honolulu  
Sam Sung  
Electronics, Inc.

## IDAHO

Idaho Falls  
Phase Four Stereo  
Pocatello  
Phase Four Stereo

## ILLINOIS

Burbank  
Digital TV  
Chicago  
Mills Recording  
Darien  
K-B TV  
Kankakee  
Barrett's  
Entertainment  
Lansing  
Unitek Electronics  
Quincy  
1st in Video  
MusicWorld

## INDIANA

Angola  
King's Antenna  
Crown Point  
Crown Electronics  
Fort Wayne  
Lehman Electronics  
Warsaw  
Butterfly, Inc.

## KANSAS

Mission  
Accent Sound  
Overland Park  
ESP Industrial  
Communications  
Salina  
Del's TV &  
Tape Center  
Wichita  
Mobile Vibrations

## KENTUCKY

Louisville  
Audio Video  
by Design  
Unlimited Sound  
& Video

## LOUISIANA

Baton Rouge  
Art Colley's Audio  
Specialties  
Metairie  
Alterman Audio  
New Orleans  
Alterman Audio

## MARYLAND

Annapolis  
Hi Tech Electronics  
Baltimore  
Record Collections  
Gaithersburg  
Audio Buys  
Myer-Emco  
Lutherville  
Gramophone Ltd.  
Rockville  
Myer-Emco

## MASSACHUSETTS

Auburn  
Leiser Sound, Inc.  
Cambridge  
Audio Video  
Environments  
Framingham  
Natural Sound  
Littleton  
Music Shack  
Seekonk  
Leiser Sound, Inc.  
Shrewsbury  
Leiser Sound, Inc.

## MICHIGAN

Ferndale  
Jam Hi Fi Sound  
Specialists  
Grand Rapids  
Classic Stereo  
& Video  
Plymouth  
Digital  
Entertainment

## MINNESOTA

Minneapolis  
Peterson  
Entertainment  
Design  
Richfield  
Pro Line Audio, Inc.  
St. Paul  
Pro Line Audio  
Robert Paul TV

## MISSISSIPPI

Meridian  
Hoopers Electronic  
Supply

## MISSOURI

Columbia  
Superior Audio  
Oakville  
Quality Sight  
and Sound

## NEW JERSEY

Cherry Hill  
Soundworks  
Cliffside Park  
Entertainment  
Environments  
Hamilton Square  
Rock Dreams  
Millburn  
Professional Audio  
Consultants  
New Brunswick  
Hi Fi Haven  
Toms River  
Rand's Camera  
& Hi Fi  
Upper Montclair  
CSA Audio  
Video Design  
Woodbridge  
Woodbridge Stereo  
Wyckoff  
Conklin's Audio Video

## NEW YORK

Astoria  
Steinway Sounds  
Hicksville  
Avtronics Ltd.  
Huntington Station  
Audio Breakthrough  
Manhasset  
Audio Breakthrough  
Merrick  
Performance  
Audio & Video  
New York  
Audio Breakthrough  
Custom Media  
Design  
Foto Electric Supply  
Lyric Hi Fi  
Sound by Singer  
Patchogue  
Square Deal  
Reno Park  
Continental Sound  
Rochester  
Rowe Photo  
Saratoga Springs  
Ambiance Unlimited  
Scarsdale  
The Listening Room  
Watertown  
The Happy Ear

White Plains  
Audio Design  
Lyric Hi Fi

## NORTH CAROLINA

Durham  
Audio Vision  
Fayetteville  
Rhudy's Camera  
& Video  
Hickory  
Dacia Electronics  
Lenoir  
Crowell's

## OHIO

Cincinnati  
Audio Vision Plus  
Cleveland  
Northwood Home  
Electronics  
Dayton  
District Audio  
& Video, Inc.  
Maple Heights  
Eric Martins, Inc.  
Westlake  
New Images  
Electronics

## OKLAHOMA

Oklahoma City  
Contemporary  
Sounds of Oklahoma  
Tulsa  
Imperial Sound

## OREGON

Salem  
Salem Sound Center

## PENNSYLVANIA

Allentown  
Miller & Seng  
Berwyn  
Soundex Electronics  
Broomall  
Hi Fi House  
Natrana Heights  
Sound Shack  
Philadelphia  
Music on the Square  
Willow Grove  
Soundex Electronics  
York  
The Electronics Place

## RHODE ISLAND

N. Providence  
Eastern Discount  
Westerly  
Leiser Sound, Inc.

## SOUTH CAROLINA

Columbia  
Laser Experience

## SOUTH DAKOTA

Sioux Falls  
Dakota Sound

## TENNESSEE

Knoxville  
Hi Fi House  
Memphis  
New Wave Audio  
and Video  
Nashville  
Hi Fi Buys

## TEXAS

Dallas  
Custom Video  
Stereo East  
Fort Worth  
Marvin Electronics  
Company  
Houston  
Audio Video Plus  
Laredo  
Jett Sales  
Lubbock  
American Audio  
Video

## UTAH

Midvale  
Inkley's  
Salt Lake City  
Inkley's

## VERMONT

South Burlington  
LaserWorld

## VIRGINIA

Falls Church  
Myer-Emco  
Franklin  
Audio Showroom  
Manassas  
Audio Buys  
Newport News  
Sound Approach  
Richmond  
Audio Exchange  
Roanoke  
Lee Hartman  
& Sons

## WASHINGTON

Bellevue  
Home  
Entertainment  
by Design  
Redmond  
The Music Room  
Seattle  
Definitive Audio

## WISCONSIN

East Troy  
Video Playground  
Glendale  
Sound Stage  
Green Bay  
Sound World  
La Crosse  
Sound World



**O**n June 25, 1989, the audio industry lost a giant in leadership when Gordon J. Gow, president and CEO of McIntosh Laboratory, died of a massive heart attack at his home in Binghamton, N.Y.

Gow was born September 16, 1919, in Lethbridge, Alberta, Canada. After graduation from high school, he was employed on the broadcast staff at a radio station in Calgary, Alberta. When Canada entered World War II, Gow joined the Royal Canadian Air Force, in which he earned the rank of flight lieutenant and served in Canada, West Africa, Gibraltar, and England. The British Crown awarded him the distinguished "Member of the British Empire" for his work and inventions related to the development of radar and aircraft direction-finding technology. At the end of his overseas tour of duty, Gow was assigned to the British delegation in Washington, D.C., to explore common communication techniques—a need which became apparent because of the various languages spoken by the Allies during the war.

In Washington, he met and, at the end of the war, joined Frank McIntosh in his broadcast consulting firm. One of McIntosh's associated businesses needed a high-powered, low-distortion power amplifier that would have a predictable long life—performance requirements that were beyond the technological knowledge of those days. Gow was assigned the task of doing the research for the development of such an amplifier, and this research led him to new areas of technology. The revolutionary nature of Gow's development was recognized when, in 1949, the U.S. government issued the first of four patents covering the "unity coupled circuit," following which the broadcast industry widely rated the McIntosh amp's performance as the best in the world.

In 1951, McIntosh Laboratory relocated to Binghamton, N.Y., where Gow, as executive vice president, began moving the company in the direction of "quality policies—quality in manufacturing, consumer satisfaction, and relationships with retailers." The present strength and growth of McIntosh Laboratory shows the effectiveness of Gow's policies. His horizons were, of necessity, not limited to one

## GORDON J. GOW



field of expertise, though he proved his ability in understanding technology early on. As executive vice president, he found it necessary to understand the financial path the company would have to follow in order to achieve its long-term objectives. A multitude of financial attractions would have been rewarding in the short term, but in the long term, would have required deviating from those objectives. If Gow had not had the clear vision, singleness of purpose, and concentration to avoid the allure of the "quick buck," McIntosh could have been a very different company today.

Gow's love of music required that the Engineering and Product Development Department make the ultimate efforts for perfection in performance. His attendance at musical events here and abroad enhanced his ability to listen to reproduced music with a fervor generated by his knowledge of the real thing.

His recognition of the retail members of the McIntosh family is legend. As retailer needs were discovered, immediate research was instituted to help meet them. Gow caused McIntosh to sponsor the first major retailer sales and communication workshops. Among other topics, these workshops provided education on personnel selection by Dr. Robert McMurry, Dr. George Nothnagel, and Jay Brinegar; communication and sales by Dr. S. I.

Hayakawa, Dr. Herb True, and the late Armand Gariapy; fiscal responsibility, including workshops on retail management and accounting with accountant Darrell McComber, and workshops on other topics designed to provide solutions to individual needs.

The great desire to better understand and, therefore, to make better predications, led Gow to membership in the International Society for General Semantics (ISGS). Because of his dynamic and extraordinary involvement, he was soon elected to the board of directors and the office of vice president. The ISGS provided Gow with the intellectual background to better understand the requirements of McIntosh retailers and consumers.

Gow directed the company to the sponsorship of a year-long study at the University of Michigan, a program to predict future behavior and life styles. Over a year's time, education department heads and graduate students wrote papers and participated in round-table discussions whose intent was to describe their world as it would be 10 and 25 years hence. The program proved to be of immense value in the design, manufacturing, and marketing of McIntosh products.

His intensity of purpose pervaded all areas to which he put his mind: Family, church, learning, and living well. When he discovered the pleasure of wine, he became a widely recognized oenophile. When he discovered Italy, he learned Italian to better understand and to be understood. His reputation in Japan was of the highest order. He earned devoted friends in countries around the world, and his reputation for entertaining was international. In Binghamton, one restaurant has on its menu the "Gow Cut" of roast beef, while another offers "Gow Clams."

Gordon Gow left the employees and stockholders of McIntosh Laboratory with a company that he carefully brought to success. We, his associates, will continue his efforts and will be strengthened by his memory.

At the family's request, expressions of sympathy may be made, in Gordon J. Gow's memory, to the St. Patrick's Building Fund, 9 Leroy St., Binghamton, N.Y. 13905.—*Maurice L. Painchaud, Executive Vice President, McIntosh Laboratory*



icon

**\$695.00**

For years, California Audio Labs has enjoyed a position of leadership in the development of high-end compact disc players. Through all of the technical development and testing, our effort has been directed toward the day when we could produce the first truly unique production compact disc play-

ers to be made in America. Until now, all of the production players in the world have been made in Japan or Europe. Today CAL brings forward the first pair of American made CD players – The ICON and the all new TERCET mkIII. The realization of this dream has been our goal. That goal is now a reality in two solid state CD players of remarkable value and performance.

# i**con**

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Today CAL brings forward the first pair of American made CD players – The ICON and the all new TERCET mkIII.

The realization of this dream has been our goal. That goal is now a reality in two solid state CD players of remarkable value and performance.

# BORN IN THE U.S.A.

**T**here is a new generation of California Audio Labs compact disc players with solid state designs so advanced that they redefine the state of the art. This new pair of players from CAL brings high quality construction and performance to new levels of affordability. Each player houses the all new CAL linear drive glass optics laser transport for trouble free operation. Both are eighteen bit eight times oversampling machines with CAL's proprietary digital circuitry. Unique analog designs result in sound quality far beyond their modest price levels. For years, California Audio Labs has set the sonic standard in compact disc players by which all others are compared. Now, through more than a year of development, CAL has shattered the price constraints of the past to bring reference level performance within the reach of every discriminating listener. These precision crafted players are engineered by the designers at CAL to be the finest compact disc players within thousands of their modest price point.

From the beginning, the goal was to bring CAL quality sound reproduction to a level of affordability in a no compromise approach. To do this, the engineers at CAL worked with top component designers here and abroad to meet new levels of

performance in digital and analog devices.

Through the use of our exclusive timing compensation on the incoming data lines and hand trimming of the linearity, CAL has achieved extraordinary high signal resolution. Star grounding is used throughout the ICON for exceptional high frequency noise rejection. Five separate regulated power supplies provide precise stability of the components. The CAL 24 bit digital filter accomplishes eight times oversampling with true eighteen bit resolution. The analog section of the ICON uses extremely low negative feedback and produces very low TIM (transient intermodulation distortion) due to the exclusive CAL analog filter design. To accomplish the necessary speed and resolution, an FET input design with high slew rate and an extremely wide bandwidth voltage amplifier was

implemented in the analog stage. This coupled with the extreme stability of the isolated supply lines to the DAC and the digital filter result in the rock solid imaging characteristics of the ICON.

Attention to detail is obvious throughout the ICON. From the design of a custom clock module, instead of the crystal oscillator used by others, to the EMI filter on the incoming AC line, the ICON represents quality far beyond its modest price. With an optional plug in digital out for optical or coaxial use, the ICON is truly an investment for all ages.

What would happen if the leading high end manufacturer of compact disc players in the world pulled together all of their resources to design an affordable compact disc player?

***The answer is ICON!***

# CALIFORNIA AUDIO LABS

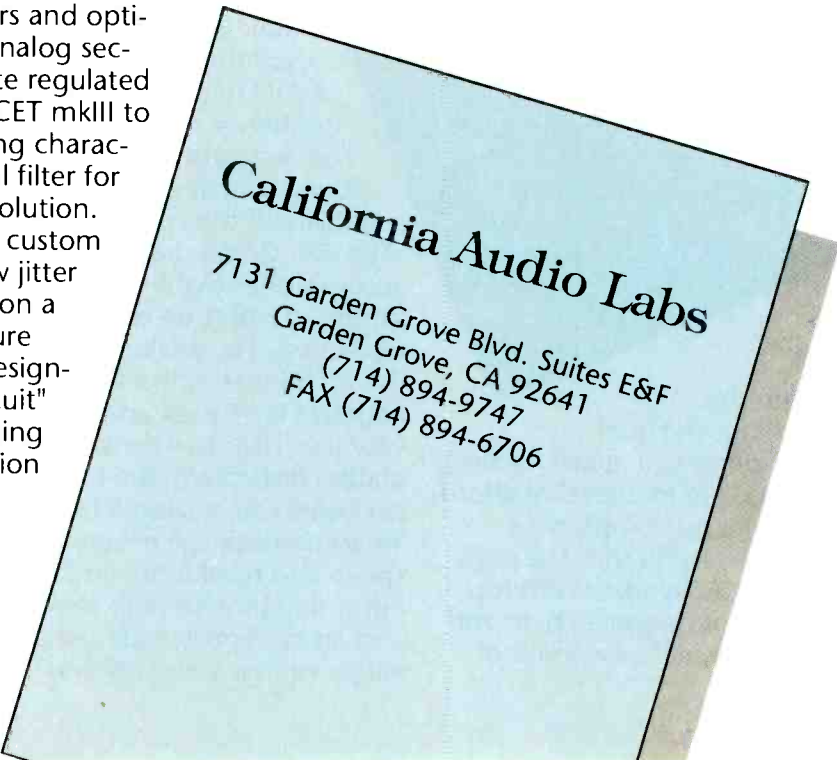
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The all new TERCET mkIII from California Audio Labs incorporates so many innovations it is revolutionary in design. The creation of our Dual Orthogonal Optical Fast Asymmetrical Power Supply with gallium phosphide optical current sources is the most advanced design in the industry. This radically new design causes a lightening-fast settling of the power supplies for low ringing and rock solid power to the critical digital and analog section. Add to this the servo controlled DC coupled output stage and the result is musical integrity with striking realism. An all discrete analog section featuring FET input with complementary output provides exceptionally smooth response true to every form of musical reproduction.

The TERCET mkIII began with the design of separate high performance eighteen bit D/A convertors and optically coupled digital and analog sections. There are 23 separate regulated power supplies in the TERCET mkIII to assure highly stable imaging characteristics and a 24 bit digital filter for extraordinary low level resolution. Each player is fitted with a custom clock module to assure low jitter and each DAC is dialed in on a precision computer to assure maximum linearity. CAL designers created a "turnable circuit" to allow for the special timing of the leading edge transition of input and output data

lines assuring extreme accuracy of the digital waveform.

The TERCET mkIII includes an EMI filter to remove noise from the AC line before it can reach the power supply. This results in lower distortion and less grain in the signal. An optional plug in digital out for either coaxial or optical applications is available for future expansion. The new TERCET mkIII is the culmination of innovative design work and leading edge technology formed into a musical instrument of exceptional performance. This quality compact disc player is a prize component which will be valued by audiophiles as a new standard of solid state performance.



## California Audio Labs

7131 Garden Grove Blvd. Suites E&F  
Garden Grove, CA 92641  
(714) 894-9747  
FAX (714) 894-6706



# Target mkIII



**\$1295.<sup>00</sup>**

**MADE IN THE USA**

For More Information



Call 1-800-553-4355

## COMPACT DISCLOSURE

*The Compact Disc: A Handbook of Theory and Use* by Ken C. Pohlmann. A-R Editions, 288 pp., softcover, \$29.95. (Available from A-R Editions, 801 Deming Way, Madison, Wisc. 53717.)

For those interested in learning about the way the Compact Disc system works without getting advanced degrees in electrical engineering, digital signal processing theory, and a lot more, there has not been, to date, a completely suitable book. If one wanted to understand the principles underlying the technology of the Compact Disc, it was necessary to dig through the literature—and I mean *dig*. Much of this literature is all but incomprehensible, except to experts.

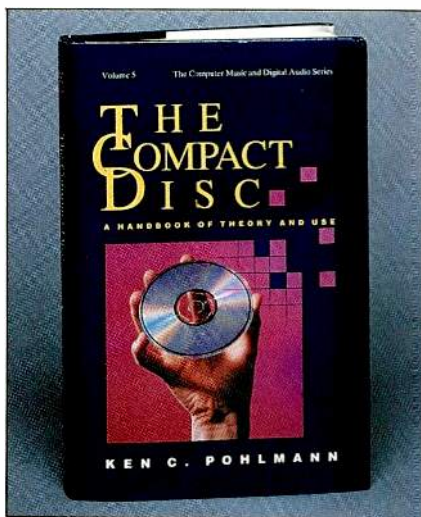
Now, with *The Compact Disc: A Handbook of Theory and Use*, there is a book in which the author does an amazingly good job of bringing much of this complex technology within the understanding of those who do not have advanced training. That is not to say that this book explains everything in absolutely solid scientific terms, but it does contain some very good explanations of quite obscure topics.

The only other books, to my knowledge, which have attempted to bring together all of the aspects needed to understand the operation of the Compact Disc are another by Pohlmann, *Principles of Digital Audio*, and one by Watkinson, *The Art of Digital Audio*. Both of these books cover many topics in addition to the CD and are, in their own ways, a bit too technical for the more casual reader.

The book under review here, *The Compact Disc*, concentrates entirely on the CD and its immediate derivatives. It is written at a consistent technical level so that the reader can follow along from topic to topic without finding the treatment of one trivial and the next incomprehensible. This is an incredibly good book, written at a technical level which is just right for those readers who have a considerable technical interest in the Compact Disc but do not want to pursue the more obscure technical literature. Those with a modest technical background will find it informative and understandable, while those with a thorough knowledge of all aspects of digital audio will find it

concise and readable. I like the book and really believe that *Audio* readers will find it to be interesting and informative. I recommend it highly.

The purpose of a review is to give an overview of the contents of the book, evaluate its technical level and accuracy, and discuss the reviewer's likes and dislikes about the treatment. I read this book cover to cover even before I was asked to do a review. I have now



gone over it several more times with the proverbial fine-tooth comb. Allow me to give you a glimpse of this book so you can decide whether or not it is for you.

First, a list of the contents. The book has seven chapters, as follows: "Introduction to the Compact Disc," 11 pages; "Fundamentals of Digital Audio," 30 pages; "The Compact Disc System," 38 pages; "CD Player Design," 53 pages; "Practical Concerns," 36 pages; "Diverse Disc Formats," 35 pages, and "Disc Manufacturing," 38 pages. In addition, there is a glossary of about 20 pages with well over 300 technical terms defined. There is a good, but not great, index. Each chapter has a considerable number of references which are very well selected, for the most part. The references are not keyed to the text as they would be in a textbook or technical paper, so it is a bit hard to tell which references are the most pertinent to a particular part of the chapter. In addition to older references, a considerable number are from 1987 and a few are from 1988. This indicates that the information in

the book is quite current, which is important in such a rapidly advancing area as Compact Disc technology. While many of the figures in the book are familiar to me from reading the literature on CDs over the years, most are new, and they are generally well done. Just a few have so much detail and such fine print that they are a bit hard to follow.

I found that the lengths of the chapters were about right, as related to the importance of the topics covered. The technical level of the treatment is extremely uniform and very appropriate to the intended audience. I am making an issue of this since it is very difficult for an author to control the level of the treatment of a complex topic when he knows more than that level requires. Pohlmann has shown himself to be a master of this technique.

Although I found no substantive technical errors in the text, I do have a few minor complaints. I noticed that, in Fig. 1.1, the diagram of the mechanical record (the "good old vinyl," as some fondly call it) shows the two groove walls marked incorrectly. It is the inner groove wall that is the left channel and the outer groove wall that is the right channel. Of course, this is probably an irrelevant matter since this form of recording is a dead issue. I do not think metal mastering will bring it back to life, as some have recently suggested in these pages.

The inclusion of an imagined conversation with Harry Nyquist (at least I hope it's imagined!) on pages 14 through 18 is a bit fanciful. It does not lend much, if anything, to understanding the sampling theorem. These pages could have been used to give a more thoroughgoing discussion of sampling. It seems to be the case that some people, otherwise quite rational, still do not believe the sampling theorem works, and that is too bad because it certainly does.

Pohlmann seems very careful in his use of the terms "de-sampled" and "reconstructed" but never spells out the essential difference. The terms "reconstructed" or "reconstruction" do not appear in the glossary or the index; they are used in later chapters, but the process is not explained there either. I believe the author is trying to avoid the concept of "convolution," which is also



not in the glossary or index. To some extent, his explanation leaves me with the impression that a digital signal is "recovered" by simply connecting the dots in the digital waveform to get the analog waveform. While this is not correct, I cannot offer a simple exposition which gives a satisfactory explanation of the reconstruction process. Unfortunately, there are some fine points about Compact Disc technology which are at the very heart of the process but simply cannot be explained without more mathematics. I fear that sampling and reconstruction are two that are very difficult in this respect.

Another minor technical matter which I found disturbing is the use of the movie film analogy, on page 19, to explain sampling and aliasing. I believe this analogy is incorrect and misleading. Further, it is unnecessary since Pohlmann also gives a spectral overlap explanation of aliasing which is quite convincing.

On page 53, the author says, "The laser beam is thus focused to a point slightly larger than a pit width." Since the pit width is 0.5 micrometers and the beam is focused to a diameter of 1.7 micrometers, I think the text should say that the laser beam is about three times the pit width. This is about the amount necessary so that the signals reflected from the pit and land add to give the cancellation effect due to interference that the author correctly describes. It would have been nice to make this point in the discussion about reading the pits.

On page 87, Pohlmann says, "The data path directs the modulated light from the pickup through a series of processing circuits, ultimately yielding a stereo analog signal." Where, of course, he means the data path directs the signal from the pickup, caused by the modulated light. . . . There are only a very few such clumsy statements in this book. On page 93, there is a misspelling; actually, it is probably a typo, but this is getting way too picky. This book is very carefully done, and one has to look long and hard to find inaccuracies or errors.

I have only a few final complaints, and these relate to the discussion, on pages 110 through 114, of the analog filters used in early Compact Disc playback units. The author seems to make

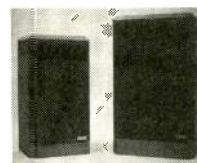
the argument that these filters are very bad. At the end of the discussion, on page 114, he says correctly that the audibility of these group-delay effects is not fully determined. Since the literature is replete with information on this issue and indicates that there are no solidly proven audible effects caused by reasonable anti-aliasing filters, this statement easily could have been a bit stronger.

The topics of transversal filters, noise shaping, and especially the problems of linearity of the D/A converters should have received a more complete treatment. Their effect on digital reproduction is very important. Recent hardware improvements in these areas probably have been by far the most important reasons for any improvements in Compact Disc playback equipment. Thus, I feel strongly that they deserve more attention.

There are too many things that I like about this book to list them all here. Chapter 3, "The Compact Disc System," is excellent in every way. Error correction, interleaving, and eight-fourteen modulation (EFM) are discussed by the author with just the right depth to give a satisfactory understanding of the processes involved—without obscuring their application to the Compact Disc.

Chapter 4, "CD Player Design," has an especially good treatment of the optical system and the tracking methods used to read the Compact Disc. Both single-beam and three-beam tracking are expertly described. The author brings the discussion down to practice by describing a complete implementation of a playback system using a chip set developed by Philips. Ending the chapter are an 8-page section on the use of the subcode bits and a 4-page section on serial signal transmission; these discussions are as good as I have seen anywhere.

The chapter on "Practical Concerns" emphasizes some quality issues that are not of much concern and does not emphasize others which, in my opinion, are. For example, wow, flutter, channel separation, and distortion get considerable attention—even though these factors are close to perfect in the CD. The problems with low-level D/A converter linearity and the use of oversampling get only brief attention, yet



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The Compact Disc is a very important book. It brings together so many familiar topics in a coherent whole.

the latter are the two hottest topics in current player design. They deserve more attention. I found the chapter on diverse disc formats very informative and useful, as was that on disc manufacturing.

I have been a bit picky about this book, but only because I think it is an

important book. It is, in the overall, very good. Reading *The Compact Disc: A Handbook of Theory and Use* was a pleasure because, for me, it brought together so many familiar topics in one coherent whole. I want to repeat what I have said several times in this review: This is a very good book. R. A. Greiner

*Audio Electronics Reference Book* edited by Ian R. Sinclair. Blackwell Scientific Publications, 615 pp., hardcover, \$149.50. (Available from Blackwell Scientific Publications, 3 Cambridge Center, Suite 208, Cambridge, Mass. 02142.)

The *Audio Electronics Reference Book* makes a good first impression; printed on high-quality paper with first-rate reproduction of its photographs, the book has the look and feel (and weight!) of authority. The dust jacket positions it as "a summary, a guide, and a celebration of the new state of audio" and promises to cover the subject "from the standpoint of the professional design and service engineer, and of the home user" (italics added).

To address these ambitious claims, editor Ian R. Sinclair has assigned the book's 20 chapters to a team of expert authors, well known to readers of the British audio press but not identified here by more than their names and, in the case of Barry Fox alone, the date (1986). Chapter titles include an introductory "Sound Waves," followed by a mixed bag of professional, service, and home audio topics. For example, for the pros are "Studio and Control Room Acoustics," "Sound Recording Techniques," and "Public Address and Sound Reinforcement." For the service engineer, there are "Pre-amps and Inputs," "Voltage Amplifiers and Controls," and "Power Output Stages." Of interest to the home user are the chapters on "Stereo," "Compact Disc," and "The LP Record." Although there are chapters on "Loudspeakers," "Loudspeaker Enclosures," and "Headphones," there are none at all on microphones and only one related entry (microphone plugs) in the index.

Perhaps this book would be better described, not as an audio electronics reference, but as a collection of essays on the art and science of audio, compiled for the serious enthusiast who comes to the book already prepared with a basic understanding of the subject matter. For although the chapters are generally well written by experts comfortable with their assigned topics, in attempting to cover so much material within the allotted space, many explanations suffer. The examples cited below are symptomatic of a work that

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*Even without fancy instrument tests, I can unequivocally report that sound rings do work—and I'm not alone...the proof of this pudding is in the listening. The sound of the CD with the SoundRing installed was more focused, the bass was more pronounced and the imaging of the various instruments was sharper.*

**Harry Somerfield**  
San Francisco Chronicle,  
San Francisco, CA

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**Bill Brassington**  
The Audiophile Society Journal,  
Rye, New York

Amazing and true.  
Ring a disc and hear for yourself  
how good the music sounds.

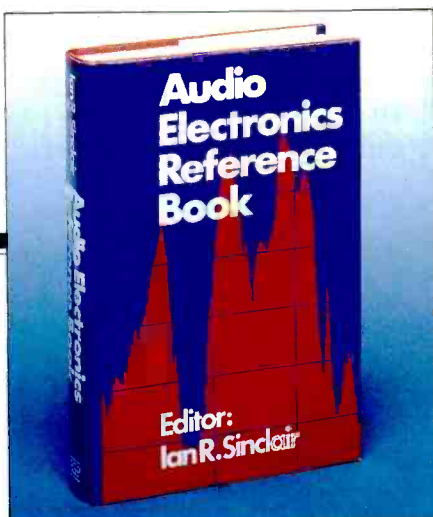
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tries too hard to be all things to all people and, in so doing, comes up short.

As an early example (page 3), we read that noise voltage "has an rms (root mean square) level which is defined in the same way as the rms value of an alternating (sine wave) voltage, but because of its random variability, the rms value must be measured as the average over a period of time." In addition to improper use of the word level, there's nothing further on rms.

As for the control of noise (Chapter 3), "A single figure rating (e.g., 25 dBA) is not generally used to describe the background noise requirements, as it is too loose a criterion." To which the expert might reply, "So?" and the amateur, "Huh?" By way of further explanation: "The curves most frequently used are the NC (noise criterion) and NR (noise rating) criteria [which are] not exactly the same. The NC system is primarily intended for rating air-conditioning noise, whilst the NR system is more commonplace in Europe and can be used to rate noises other than air conditioning." No doubt, but what is a dBA, an NC, and an NR? For that, the reader must look elsewhere.

Overall, Ian Sinclair and his authors have not been well served by the production editors at Blackwell Scientific Publications. Units and symbols are stylistically inconsistent, and there are too many cases of improper word usage, which are either confusing, misleading, or just plain funny. As an example of the latter, "In 1498, Columbus discovered the continent of America" (wrong on two counts). Later on, we are misled by reading that a loudspeaker "converts electrical energy into mechanical energy in the form of sound waves" and that "single-channel stereo machines have a place in the professional recording studio." These are the sort of slips of the tongue that any expert might make in

*Audio Electronics* would be better described, not as a reference work, but as a collection of essays on the art and science of audio.

casual conversation, but they should have been caught and corrected before the book went to press. There is an explanation of CD subcode channels which may be used to advantage for "language tuition . . . to display words on screen." No doubt the author meant to say "language tutoring."

A bit more serious a difficulty is the casual treatment of math, where it's far more difficult to deduce what an author really meant to say. In one case, the text gives an equation (15.27) derived from the previous equation, when it is, in fact, an explanation of a variable in the previous equation. On the next

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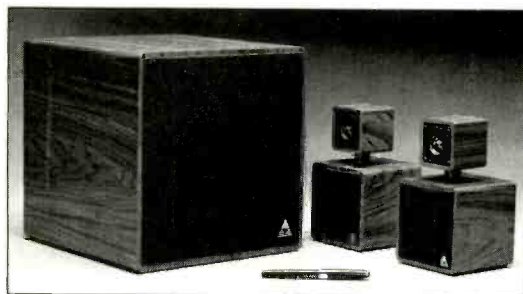
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*Audio Electronics* tries too hard to be all things to all people and, in so doing, it comes up short.

page, an equation is said to come from two earlier equations, and so it does. But not from the two cited. Even worse, the equation is an early step in a sequence whose conclusion is ... the same equation.

Some chapters conclude with a list of references while others don't. But even when references are given, sources cited in the text are sometimes not found in the references—as, for example, the patents of Lueg and the work of Olsen (sic) and May. Other lapses are merely annoying, such as "rording companies," a "Verbical Cutting Angle," and "Ohma."

Barry Fox's chapter (7) on the Compact Disc presents an excellent 21-page summary of the subject, but even here there are a few problems, as in "The CDROM player works like an audio player when used to look for a favourite snatch of music it snatches data instead." And in the large chapter on "Tape Recording," one reads that for digital recording, "The inherent non-linearity [of] magnetic tape is of little importance when it is only called upon to record a step type transition of voltage level." Well, yes and no; prior to recording, these quantized step-type transitions are encoded into a digital pulse train for which magnetic non-linearity is indeed of little importance. However, if a series of voltage steps (not *level*s) were recorded on tape, nonlinearity would be a problem.

On examining "Sound Recording Techniques," it turns out to be a mostly technical and historical overview of professional sound recording hardware, supplemented with information about the specific equipment inventory in some London studios (notably, Tape One) and the names of a few stores that sell jacks and connectors, "including the Swiss-crafted Neutrix XLR versions." Close, but no cigar: The company is Neutrik, and XLR is a model number used by ITT Cannon.

The reader who can ignore the problems just described may find the *Audio Electronics Reference Book* interesting and of some value as a once-over-lightly treatment of the included subject matter. But when a work calls itself a reference book and carries a price tag of \$149.50, the customer—to say nothing of the contributors—deserves more attention to detail. *John M. Woram*

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The Dahlquist DQ-10, the original Phased Array dynamic speaker system, became a legend in its own time. This seminal design employed many of the concepts which are still at the leading edge of loudspeaker design. The importance of low diffraction distortion and correct inter-driver time delay were certainly popularized by the DQ-10.

The DQ-10 has been replaced by the DQ-20. Three extraordinary drivers have been combined with advanced enclosure technology to cover a wider range with greater efficiency than was possible with the DQ-10. The same attention to diffraction control and time delay distortion allows the DQ-20 to provide the expanded open window on the soundstage for which Dahlquist is famous.

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## RX-1010VTN Audio/Video System Control Center

# CSRP — Getting control over the possibilities



Audio/Video Inputs and Outputs on Back (S-Video Terminals Included)

With technologies as advanced as Digital Acoustics Processing, Dolby Pro-Logic, electronics equalization and digital delay processing plus the variables of front and rear channel levels, balance, loudness compensation and even room compensation. The RX-1010VTN is an engineering marvel. It can quite literally recreate any acoustic experience, whether it be a movie in your neighborhood theater or the sound of a choir in a great cathedral. But how does one control the over 10 million possible settings necessary to achieve this?

CSRP — or COMPU LINK Source-Related Presetting — does the chore completely and automatically. Touch a single button and all the parameters change to a setting that is appropriate for the source you've selected.

Then if your listening determines that some fine tune adjustments should be made, make them. One more button updates the memory with your changes and from then on recalls all the settings everytime you return to that source.

For example: When you turn on your hi-fi system and listen to a CD, you get response specially customized for CD listening. Level and channel balance are properly adjusted, a customized equalization is recalled, and parameters for JVC's sound field processor — the Digital

Acoustics Processor — are all optimized for the size and acoustics of your listening room.

Or, as you switch to video, settings you've preset for the Dolby Pro-Logic decoder, such as the center-channel

mode and center and rear levels, are automatically recalled.

This also holds true for all program sources — records, tapes and even individual radio stations. Since the RX-1010VTN accepts connection of up to eight audio and video programs, and provides presets of 40 FM/AM stations, this means it can handle customized control settings for a total of 48 different program sources or stations. That's control.

### Example of Fluorescent Display with CSRP Preset (VCR-1 as a source)

(1) Source selected



(2) Volume, balance, loudness setting



(3) S.E.A. graphic EQ setting



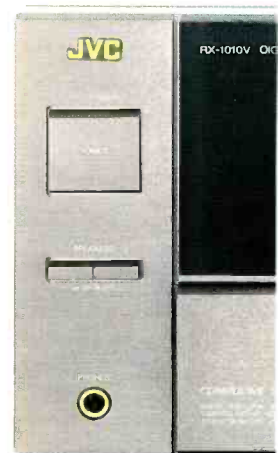
(4) Dolby surround setting



(5) DAP setting



(6) Normal setting







## DAP — Digital Acoustics Processing

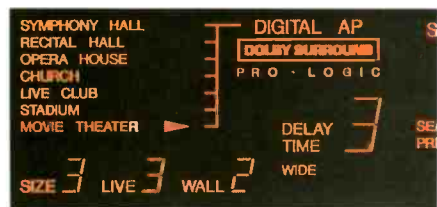
In the RX-1010VTN, there's a ROM (Read-Only Memory) that stores the sound field patterns we measured at famous halls and theaters all over the world. Seven patterns, from symphony hall to movie theater, are programmed in memory for instant recall.



And you can fine-adjust these pat-

terns to suit the size, "liveness" and wall type of your listening room. This ensures that the ambience of your listening room is completely compensated for so that you enjoy the reflections and reverberations of only a desired hall.

## Dolby Pro-Logic



With sound steering, active matrix and center channel output, Dolby Pro-Logic Surround provides you with an enhanced sense of direction and sharply centered dialog. When

watching videos, it will make you feel as if you were sitting in a first-class movie theater, especially since the digital acoustics processor is already at work.

The remote is a convenient LCD touch panel. The amplifier is a state-of-the-art Super-A design.

Our RX-1010VTN simply does everything and keeps everything simple.

\*\*"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.



## XL-Z1010TN Compact Disc Player

# K2 Interface — Revealing possibilities at the source

Changing the digital code on a CD into music requires that a digital-to-analog converter choose 1 of 65,536 possibilities every 1/44,100th of a second.

It's commonly assumed that digital signal is composed of 1's and 0's, each represented by the presence or absence of a square-shaped pulse. But the fact of the matter is, a digital signal contains ripple — a type of distortion that changes the shape of a waveform — and jitter, components that move the timing of a pulse forward or behind.

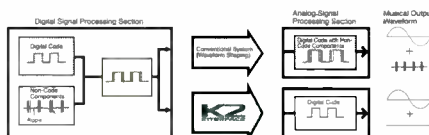
These "non-code" components can result in a sound that differs from the intent of the digital source. The K2 Interface solves this problem by completely regenerating the digital signal. At the heart of the K2 Interface is essentially an ultra-high-speed camera with a shutter speed of 20 nanoseconds (20 billionths of a second). Based on these quick snapshots, it recreates the digital signal as a perfect square wave.

Providing a perfect signal to the D/A converter allows for accurate reproduction of all the nuances such as sound staging and depth.

As a matter of fact, in many ways both frequency range and dynamic range are expanded. High frequencies sound clearer. There is a heightened sense of power in the mid- to low-frequency range. Music

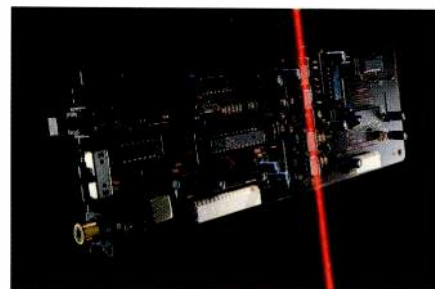
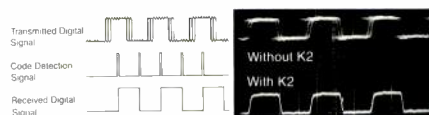
### Comparison of K2 Interface and Conventional Transmission System

The JVC K2 Interface strips the transmitted signal of ripple and jitter as it travels from the digital to analog processing circuit.



### Data Transmission Waveforms

The clean shape of data transmission waveforms indicates that the K2 Interface has removed ripple and jitter.



The K2 Interface optically decouples the digital from the analog section

seems to acquire more depth and width, providing clear images of instruments and voices. Overall, sound is smoother and more natural across the audio spectrum.

### Precision D/A Converter System Using Four D/A Units

The XL-Z1010TN features two D/A converter units for each channel — four in all. There is a 16-bit converter for most significant bits and a 2-bit converter for most significant bits and a 2-bit converter for the two least significant bits. Since the least significant bits have greatest bearing on the sound quality at low level, JVC uses an elaborate discrete D/A converter system for these bits to ensure higher precision. All four converters operate with 18 bits "full time" whether the level is high or low. Our "quadruple full-time linear 18-bit combination D/A converter" allows you to enjoy digital sound at its most delicate and dynamic.







## XP-A1010TN Digital Acoustics Processor

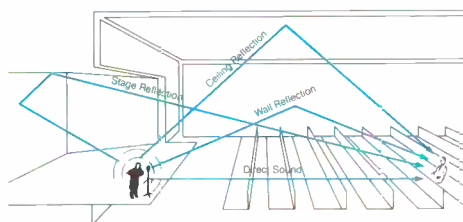
# Bringing new possibilities to the home

Many of us have already invested in fine audio systems for our homes. Even the best, however, sound like music being played in a home environment.

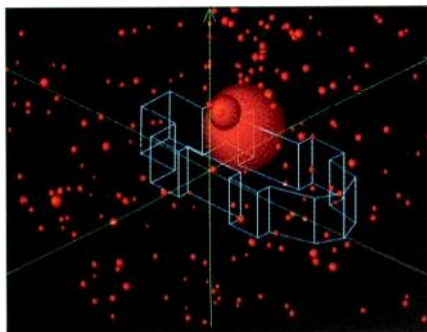
A new age is dawning in audio realism, thanks to the vast advancements in digital engineering. Now it is possible to simulate the acoustic ambience of a live music space — concert hall or movie theater — and recreate it right in your own listening room.

The new JVC XP-A1010TN Digital Acoustics Processor is the key. No other component available today so accurately brings concert hall ambience to the home.

The processor features a ROM (Read-Only Memory) containing a huge amount of data on reflections and reverberations — “sound field patterns” — our engineers measured in actual halls and theaters throughout the world.



Acoustic Response of a Musical Space



CHURCH  
Sound Field Analysis Pattern

### JVC's Unique Advantages of Acoustics Synthesis

The JVC XP-A1010TN offers a number of unique advantages. One,



Symmetrical 6-Point Sound Field Measurement Microphone Set

excessive reflections and reverberations added by your listening room can be compensated for, and so can reverberations contained in the source program. This means a precise sense of the size and shape of a simulated space is accurately re-created in any listening room.

Two, the entire process, from input to output, is performed channel by channel independently. Therefore, critical time-related information contained in music is retained, providing a natural sound field ambience.

Three, the size of the sound source — a point, like a solo or a spread, like an orchestra — is precisely reproduced.

The XP-A1010TN comes with sound fields from 20 actual concert halls, jazz clubs, theaters and stadiums. You can customize an additional 20 patterns of your own. With the XP-A1010TN, the possibilities now include the recreation of the concert halls around the system in your home.



## AX-Z1010TN High-Power Class-A Amplifier

# Digital Pure-A New possibilities for class-A

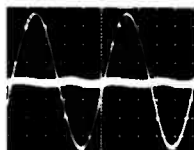
There's no doubt that an amplifier operating in class-A mode provides lower distortion and cleaner sound than those in popular class-B or class-AB. Their inefficiency, however, makes class-A amplifiers require elaborate heat sinking, and still the amps waste much of their power in the form of heat. This results in inflated cost and relatively low power output. But to enjoy the dynamic sound of digital programs, you need a lot of power.

How to combine the low-distortion sound of class-A with efficiency and power demanded by digital audio?

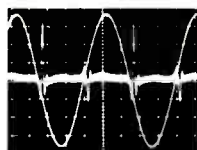
### Class-A vs. Class-B Operation

With class-A, combined output from the paired transistors looks very close to that of the input. With class-B, this is not so, leading to crossover and switching distortion.

Output Waveform



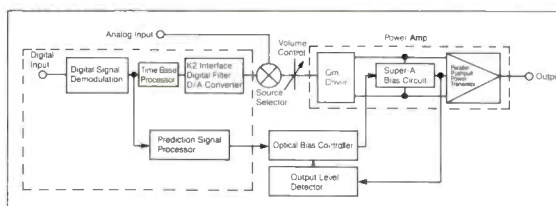
Class-A



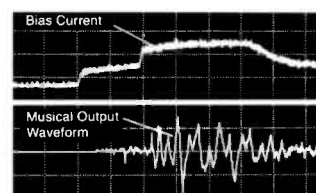
Class-B

### Enter the Digital Pure-A Type II

JVC has the solution — the Digital Pure-A Type II circuit featured in the AX-Z1010TN "Digital" Integrated Amplifier.



Block Diagram of Digital Pure-A Circuit Type II



Operation of Digital Pure-A II

This ingenious design takes the advantage of the fact that digital signals can be stored in memory temporarily without changing their frequency response of phase response.

In the Digital Pure-A Type II, digital signals fed directly from digital equipment are split into two: the main signal and the "prediction" signal.

The AX-Z1010TN is a "digital" integrated amplifier incorporating a D/A converter system complete with the K2 Interface, 8-times oversampling and quadruple D/A converters.

And the amp features a special design for analog programs too — Opt Super-A, another JVC exclusive combining low distortion and high efficiency.





**HiFi**

## TD-V1010TN Discrete 3-Head Cassette Deck

# *The world's finest cassette deck? A distinct possibility!*

When it comes to specifications for cassette decks — such as wow & flutter, frequency response and signal-to-noise ratio — we can safely say today there is only marginal room for further improvement. This is because of the steady but sure advances over the years in mechanical design, heads, noise reduction designs and tapes.

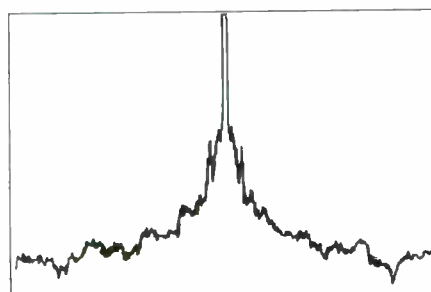
We have isolated "dynamic" response as one of the final steps in ensuring taped sound that's as pure and transparent as can be. We even developed a new specification to measure the degree of purity and transparency a cassette deck can provide: acoustic modulation noise.

In this measurement system, the test deck is subjected to a high 100-phon sound pressure during recording and playback. More rigorous than conventional modulation noise tests, this new method better simulates a real-world situations where the deck must operate while speakers are playing music.

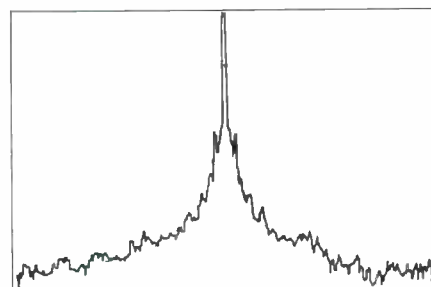
### **Taped Sound Free of Acoustic Modulation Noise**

Based on what we discovered from

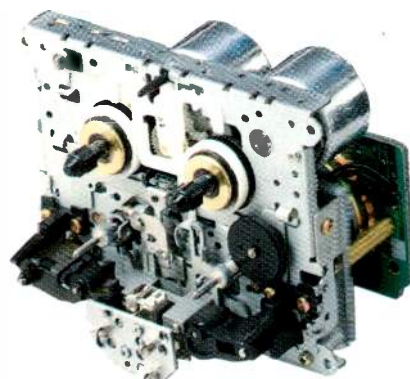
"Acoustic Modulation Noise"



Response of Conventional Deck



Response of Rigidly Built Deck



Closed-Loop Dual-Capstan Drive Mechanism

our test, we've developed solid mechanical designs in order to suppress resonance and vibration. The result of our efforts is taped sound that rivals digital.

Moreover, there are other ways we've improved clarity and purity of the taped sound of the TD-V1010TN. A "CD DIRECT" switch lets you route the signal from your CD player direct to the cassette deck. We've cut down wiring to a minimum length using remote rods and controls. We use the time-proven closed-loop dual-capstan tape transport to suppress modulation noise. "Fine" amorphous heads, highly pure PCOCC copper wire and high bias frequency also enhances the purity and transparency of the taped sound.

If you think that taped sound cannot compare with digital programs, you owe yourself a listen to the TD-V1010TN.



## FX-1010TN Computer-Controlled FM/AM Tuner

# Self-adjusting to the possibilities

The FX-1010TN is a smart tuner that adjusts itself to the endless possibilities in the capture of radio signals.

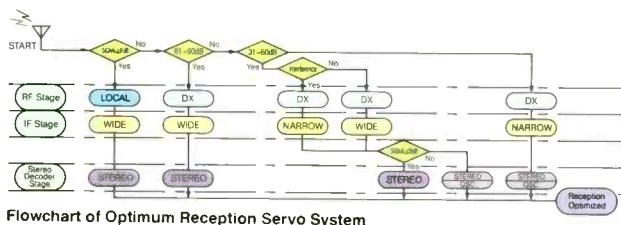
Our reception servo automatically selects the optimum operating mode — front-end gain,

IF bandwidth, stereo mode, etc. — after checking the degree of interference and the strength of the station you're tuned to. It guarantees you get the best reception anywhere and from every station. And yet the digital noise, which a

computer could create to muddy sound, is cut down by the "Opticalink" system separating the digital section from the analog.

The computer is put to use for special conveniences, too. You can preset up to 40 FM/AM stations for one-touch recall. And give a name to each preset station. You can let the tuner automatically preset all 40 FM/AM stations for you. You can "shop" for stations one by one. Also you can set the muting level to tune all stations in your area or only a few powerful ones.

Add circuitry designed for low distortion and wide dynamic range and you'll see that the FX-1010TN is the tuner that addresses the practical world of radio reception.



*We are no longer at the threshold but have passed well into the world of digital technologies and their applications. In full view of the possibilities, we have endeavored to develop products that will endure the test of time and stand as small reminders that technology can advance while remaining sensitive to the needs of its users.*

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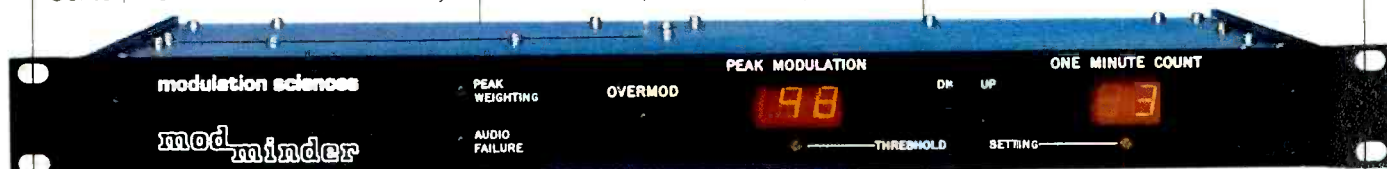


# EVERYTHING IN MODULATION

A few weeks ago, I had a chance to visit the transmitter sites of two of New York City's better classical music FM stations: WQXR-FM and the municipal public radio station, WNYC-FM. My host was Eric Small, president and co-owner of Modulation Sciences, a company that has been supplying signal processing gear to radio and TV stations for quite a few years. As a long-time fan of FM radio, I couldn't resist the temptation to crawl around atop the Empire State Building, where WQXR's transmitter is housed, and atop the 110-story World Trade Center, the "home" of four of the city's

in 1983, in order to get Type Approval, a modulation monitor had to flash if 10 consecutive cycles of 10 kHz exceeded 100% modulation. This meant that the response time of the peak flasher had to be 1,000  $\mu$ S, or 1 mS. Also, in the automatic transmitter system rules of the same era, the maximum number of overmodulation events permitted per minute was 10. Small discovered that virtually all modulation monitors made before and after the 1983 FCC deregulation had peak flash indicators that operated in *one* cycle of 10 kHz or less, which translates to a response time of 100  $\mu$ S or less. Apparently,

Minder ignored brief (less than 1-mS) spikes, which have no impact on occupied bandwidth. As Small explained, one way to describe ModMinder is as a device that allows reducing the *apparent* ratio of peak-to-average modulation. This improvement can be used to increase the number of peaks allowed through (reduce the amount of signal processing or compression), increase the average modulation (make it louder), or do a bit of each. For lightly processed classical music stations, the difference amounted to as much as 5 dB. Very heavily processed stations showed less than 1 dB of difference,



FM station transmitters, including that of WNYC-FM.

My purpose was to watch an experiment Small was about to conduct—an experiment that he felt could free FM stations from the need to employ vast amounts of compression.

It's no secret that most stations, to remain competitive, must try to sound as loud as—or, in some cases, louder than—their competitors. In playing the "louder than the next guy" game, the only way stations can accomplish their goal without exceeding modulation limits imposed by the FCC "way back when" is to limit dynamic range. I know of at least one station in New York City that compresses so heavily that their average dynamic range, monitored over a period of several days, was no more than about 6 dB! And this, in the era of digital Compact Discs, no less! Well, if a station's format is nothing but hard rock, perhaps that's not too serious, but if a station's format calls for classical, jazz, or other forms of pop music, that kind of compression can make music sound lifeless.

What Eric Small set out to prove with his newly designed modulation monitor, the ModMinder, was that most, if not all stations were actually using more compression than necessary, simply because their modulation meters were providing false indications of overmodulation. Before the deregulation of modulation monitors by the FCC

makers of this equipment must have felt that faster was more conservative, or that it was easier to design a fast peak detector than a slower one.

While deregulation opened the door for slowing down the response times of peak flashers, most modulation monitor manufacturers continued to play it safe, providing peak flasher response times that were much faster than they needed to be. The result: Stations had to either back off too much on their modulation levels or introduce more compression than was needed in order to remain competitively "loud."

In stereo TV, modulation must be set exactly to the reference level of the dbx L-R noise reduction encoder which forms a part of the MTS stereo TV system. In the course of trying to resolve TV audio modulation problems, Small and his engineers discovered just how overly fast most peak flashers responded. Once they slowed down such flashers to meet the old FCC spec of 10 cycles of 10 kHz, most of the TV overmodulation problems vanished. It was then that they became curious as to what effect the 1-mS response time would have on typical stereo modulation.

With a prototype monitor having a 1-mS response time, they monitored various off-air signals using a high-quality tuner. On some stations, the prototype ModMinder indicated as much as 5 dB below the "standard" modulation monitors. This was because the Mod-

but even stations that used moderately heavy processing were able to show an improvement in loudness of almost 2 dB by merely adjusting total modulation using the ModMinder. No changes in the adjustment of the processing equipment had to be made.

At both stations we visited, the engineers were surprised to find how much difference the ModMinder made when used in place of their current peak-modulation meters. In one case, there was a difference of about 20% in peak modulation indications. (The ModMinder never showed higher than 80% modulation readings with the other meter adjusted to flash and limit at what it "thought" were 100% modulation peaks.) The second station visited had been operating even more conservatively, with the ModMinder indicating no more than around 75% peak modulation while the conventional meter showed peaks of 100%.

ModMinder holds the promise of combining maximum loudness—and, hence, better S/N ratios—with greatest quality. Stations that have suffered a competitive loss because they refused to "nail the processing to the wall," as Eric Small puts it, can now maintain maximum loudness without overprocessing, and heavily processed stations now have an alternative that could enhance their competitive position without further squashing and squeezing!

A



# RIISING ABOVE THE CD JUNGLE







For most people, buying a CD player is a lot like taking a short stroll along the Amazon. And forgetting your map. Sooner or later, you're going to get lost.

That's because the "jungle of misinformation" about CD players makes it difficult to know what's really important. And what isn't.

Take a quick look at some of the claims—digital bit structures (what are they, anyway?) ranging from 1 to 45. Oversampling rates from 2x to (quick, who's got the latest?) 16x. All this for the sake of a numbers race. And not necessarily for the sake of the music.

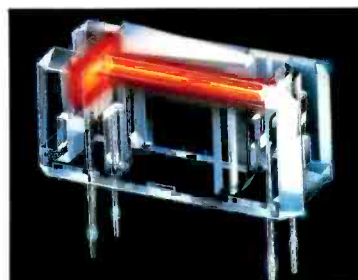
Well, Onkyo offers you a real way through this undergrowth.

Of course, we have an impressive variety of both single- and multiple-disc players. With extraordinary levels of technology in even our most affordable models.

For example, we individually calibrate the critical Digital-to-Analog Converters in our DX-1700 and DX-2700 players to fine-tune their linearity and minimize distortions peculiar to the digital process.



Most of our models also benefit from Opto-Coupling, an Onkyo-developed technology that transmits data optically rather than through conventional wiring for more accurate CD sound.



But for Onkyo, outstanding products are just the beginning. We'll make your journey through the CD jungle even easier with two indispensable guides.

The first is an in-depth explanation of digital bit structures and how they affect musical performance. The second is a down-to-earth journey through all the claims you're likely to run into, as well as the hard facts you'll need to master the CD jungle. And they're available at your Onkyo dealer now.



Onkyo. We'll give you more than just superb CD players. We'll also give you the knowledge you need. Because it is a jungle out there. And only the fittest survive.

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# A Real World Guide to CD Player Technology

## Introduction

*In theory, Compact Disc technology is surprisingly simple.*

*A disc stores information in the form of 16 bit digital words (16 consecutive "0s" or "1s"). This information can be reproduced through conversion of those 16 bits into what is called the analog domain by using a device called a digital-to-analog (D/A) converter. An output filter then removes unwanted ultrasonic frequencies inherently produced by the digital process.*

*However, the engineering methods now used to accomplish these tasks require sophisticated devices called digital filters in addition to the D/A converters mentioned above. As is unfortunately typical of most new technology, explanations of both operation and their significance have created substantial misconceptions. Onkyo thinks it is time to clear the air, and we have prepared this practical guide to*

*digital technology so you'll be equipped to survive the digital jungle!*

*We think you'll find the following information useful, relevant, and even enjoyable.*

*We'll explain the operation of digital filters: what they do, what various digital word lengths really mean, and why a CD player with "18 Bit" on the front panel may not be an 18 bit player at all!*

*We'll also cover the little understood but critically important concept of LINEARITY in the D/A conversion process and finish with some words of caution for those of you who may think that the recently introduced 1-bit conversion systems herald a new digital dawn.*

## A few words about the CD format and sampled waveforms

The Compact Disc format specifies that audio data be stored on the disc at the rate of 44,100 16-bit words for every second of music. And that's only for one channel! In addition to the musical information, other data relating to arcane subjects like EFM demodulation, synchronization, error correction codes, etc., adds to the constant flow of information off the disc. In fact, the optical pickup of every CD player reads data from a disc at an almost unbelievable rate of 4.3218 million bits per second!

In a perfect world, it should be relatively simple to convert each channel to an analog audio signal, to be amplified and applied to loudspeakers. However, the digital world is not perfect, despite what you might have heard.

Two important obstacles must be addressed by the CD player's circuitry.

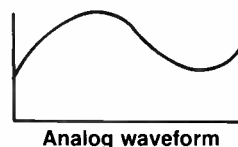
First, D/A converters are not perfect. Only a perfect 16-bit converter could completely reproduce the 16-bit audio data and the laws of physics, at least as we now understand them, dictate that such converters cannot exist. Thus, truly accurate conversion is a painstaking process and care must be taken to provide as accurate

a conversion as possible. As we shall see, this may include use of individually calibrated linear 18-bit converters.

Secondly, sampled analog signals, such as those present at the output of a D/A converter, contain a large amount of ultrasonic information generated by the digital process itself. This extraneous high frequency data, definitely not part of the original audio signal, is potentially harmful to other high fidelity components and must be suppressed in some way before the signal passes "downstream."

Where does this unwanted information come from? The following will give you a good conceptual understanding:

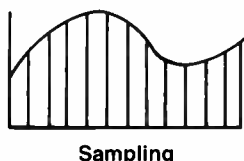
Digital recording begins with a process called "sampling," in which the original musical waveform



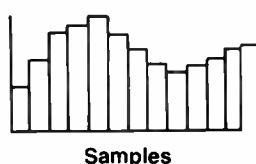
is divided, or sampled, many times a second. (This



process is remarkably similar to cutting a loaf of bread into many individual slices.) In the case of a CD, each channel of the stereo musical signal is sampled, or divided, 44,100 times each second. That's what a "sampling rate" of 44.1kHz really means.



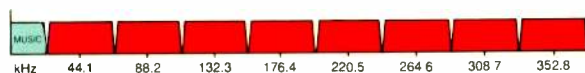
Each "slice" of music, then, becomes a separate entity, which can be easily handled by the digital process. The result looks something like this ---



The next step is called "quantization," and involves assigning a numerical value to each of these samples. Quantizing simply substitutes 16 "0s" and "1s" (called a digital "word") in a very precise order corresponding to the original measured value of each sample. Think of weighing each slice of bread on a scale and writing the result in a notebook.

Unfortunately, the quantization process is only an approximation and is much like the quandary you would face if your slice of bread weighed 1.26 ounces but you were told to put it in either a "1 ounce" or "1.5 ounce" wrapper. Specifically, the CD standard allows for 65,536 different quantization possibilities but not every sample precisely "fits" where the digital system says it should. The resulting differences generate "quantization noise," which manifests itself as the spurious high frequency information mentioned above.

A closer look reveals the identity of these high frequency noise bands. They are images of the original audio signal repeated at multiples of the sampling frequency.



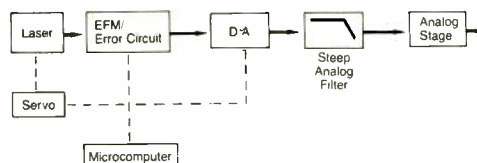
= Unwanted Quantization Noise Images

In the case of the CD format, these quantization noise bands are centered at 88.2 kHz, 132.3 kHz, 176.4 kHz,

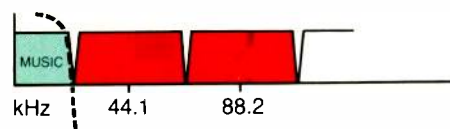
220.5 kHz, etc. This occurs in any digital audio product and is a natural consequence of using sampled waveforms. Even though these frequencies are well above the highest humanly audible frequency, they could interfere with an analog tape recording by "beating" against a bias oscillator, or affect stereo radio transmission. In addition, they could cause harmful instability (called oscillation) in an amplifier or even burn out the tweeter in a loudspeaker system.

First generation CD players

#### Basic CD Player



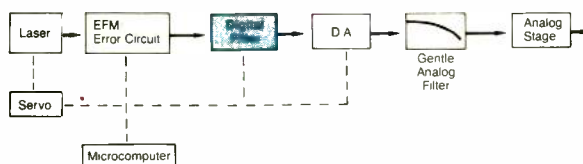
used a "brickwall" analog filter after the D/A converter to eliminate these frequencies. Although very effective in removing the unwanted noise bands before they could potentially cause damage, these very abrupt filters were not very kind to the music as it passed through.



Besides being bulky and expensive to build, these filters drift with age, and they have a negative affect on audio quality because of subtle variations on frequency response and not-so-subtle effects on the phase relationships of higher musical frequencies.

To combat this problem, later generation players employed a digital filter in addition to the analog filters.

#### Oversampling CD Player



Although digital filters perform a similar function, they operate in the digital domain instead of the analog domain and this has led to a number of widespread misconceptions.

# The truth about Digital Filtering and Oversampling

As we've seen, all sampled waveforms contain extraneous high frequency information called quantization noise bands or images. Although these can be removed from the final analog waveform with just an analog filter, there is a more clever way—a supplemental digital filter.

A digital filter is a fast but not very versatile computer. It takes the stream of digital words from the CD and calculates additional digital words which it inserts between the original ones from the disc. The filter does this through what is really an elementary series of high speed multiplications and additions—precisely the kind of relatively mindless number crunching that computers are good at.

This high speed creation of new digital words is called "oversampling" because the filter creates additional digital words, or samples, where none existed before.

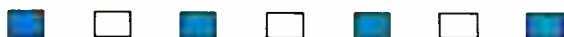
If this drawing represents the digitized samples from the disc—

**Data from Disc**



then this represents the result of a "2 times oversampling" digital filter which produces twice as many samples as existed originally.

**2x Oversampling Digital Filter**



A 4 times oversampling filter, twice as fast as a 2 times design, produces samples as follows.

**4x Oversampling Digital Filter**



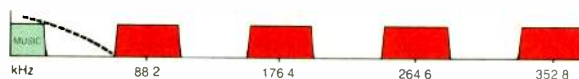
—Data From Disc



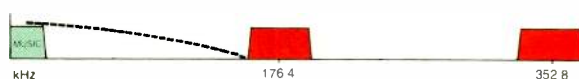
—Additional Samples Created by Digital Filter

A digital filter, then, processes audio data while still in digital form before it is reconstructed as an analog waveform. The major advantage is that the digital filter's computation shifts the unwanted noise bands higher in frequency and consequently further away from the music. As you can see from the following drawing

**2x Oversampling Digital Filter**



**4x Oversampling Digital Filter**



**8x Oversampling Digital Filter**



the faster the filter's operating speed, the further away the noise bands will be and progressively less radical analog filters are required to protect the rest of the high fidelity system from the potentially harmful effects of the quantization noise bands.

Thus, the real burden of filtration shifts from the analog domain to the digital domain, where it can be done more easily, more accurately, and with little or none of the sonic problems associated with steep slope analog filters.



# Some common misconceptions about Digital Filters

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Unquestionably, digital filters represent a great improvement over the use of analog filters alone. However, their performance must be kept in perspective, and the extent of their advantages understood.

A digital filter solves the problem of noise bands by fooling Mother Nature. **However, a digital filter does not, in theory, affect the audio signal at all, either in terms of its accuracy or fidelity. A good digital filter strives to leave the audio data unaffected.**

**The idea that a so-called 18-bit digital filter alone represents an advantage is a misconception.** In fact,

the computations performed in every digital filter generate words of perhaps 28 bits or more. As long as the internal calculations are accurate, and a sufficient number of bits is retained after each calculation, **the number of bits output from the filter is not relevant to the fidelity of the output signal. The fact that some manufacturers advertise, for example, 18-bit digital filtering is in itself a meaningless claim.** What is relevant is how those bits are employed AFTER the filter.

## D/A conversion architectures

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### Linear 18 Bit Conversion

As already noted, a 16-bit D/A converter cannot perfectly reproduce the 16-bit audio data from a Compact Disc. Inevitable conversion losses always result in something less than 16 bits of information returning to the analog domain. As explained in an earlier Onkyo white paper, there are several very real advantages in using 18-bit D/A converters to reproduce 16-bit data from a CD. **A linear 18-bit converter can provide a much more accurate reproduction of those 16 bits, hence providing measurably lower noise and distortion in the audio signal.**

### Pseudo 18 Bit Methods and Their Limitations

Some manufacturers seek the same benefit through pseudo 18-bit methods. For example, they might use bit switching through a 16-bit D/A converter, or use parallel 16-bit D/A converters. While workable, such designs usually introduce problems. A major hurdle, for example, in a bit-switching system is the high speed analog level adjustment that accompanies the digital bit shifting. These rapid level switches can produce audible glitches or other unwanted anomalies that are totally avoided by true linear 18-bit D/A conversion.

### A Comment On 20-Bit Designs

A seemingly logical question must be asked: if 18-bit conversion offers real advantages over 16-bit, doesn't 20-bit offer similar advantages over 18? The answer, surprisingly, is no.

To fully understand this, remember that every compact disc carries information in the form of 16 bit words and that the job of ANY D/A converter is to convert that digital information as accurately as possible. 18-bit conversion, as already described, addresses real world limitations of 16-bit converters **but 20-bit conversion provides no demonstrable benefits because of flaws in its current implementation.**

Right now, no integrated circuit manufacturer supplies a linear 20-bit D/A converter for use in CD players. This lack, caused by several very difficult design and manufacturing considerations, has led some companies to combine 16-bit and 4-bit IC converters, or 18-bit ICs and separate 2-bit discrete circuits, in a so-called 20-bit conversion scheme. However, temperature differences between the two converters often preclude accurate synchronization. In addition, the circuit used to sum the outputs of the different converters adds unnecessary complexity to an already strained design.

### D/A conversion (cont.)

20-bit designs do offer a theoretical improvement in signal-to-noise performance, possibly 12 dB better than linear 18-bit conversion designs. But this must be balanced by the fact that ultimate performance depends not on the capabilities of the players but rather on the inflexible 16-bit limitations of the discs themselves. In other words, this theoretical improvement is of little practical value.

**As of this writing, 20-bit conversion appears to be more of a marketing statement than an engineering accomplishment.** However, the arrival of fully integrated linear 20-bit conversion ICs may well warrant a reconsideration of this opinion in the future.

## The real question—D/A conversion linearity

---

D/A converter accuracy is even more important than the number of bits processed by the D/A converter. **Conversion Accuracy, also known as Linearity, really determines the fidelity of the audio signal.**

A D/A linearity test measures the converter's ability to reproduce various analog signals, particularly less intense ones like soft musical passages, that directly reflect the value of the digital word from the disc. Any deviation, or nonlinearity, results in harmonic distortion in the audio signal.

For example, when a bit changes from 1 to 0, the analog output must decrease exactly by a proportional amount. Of course, the amount that the analog voltage changes depends on which bit has changed. That's because each bit has a different influence on the analog signal. The most significant bit (MSB) accounts for a change in fully half of the analog signal's amplitude, while the least significant bit (LSB) in an 18-bit word represents a very minor amplitude change of less than four parts in a million!

Most good D/A chips include a means to calibrate the converter. This allows the manufacturer to compensate for minor differences between chips that might otherwise cause variations in sound quality.

Some D/A chips offer calibration of the MSB only, while others offer calibration of the four most significant

bits. Because these most significant bits steer the converter's output, proper calibration greatly improves overall accuracy.

This accuracy is most significant at low levels (e.g. quiet musical passages), usually below -60 dB. These non-linearities can easily be heard; for example, an industry standard test disc produced by CBS contains a "fade to silence" test tone. Poor D/A linearity is plainly audible as a pronounced variation in the desired steady decrease in loudness as the tone is being played. Similar problems arise with music but the effects are more subtle because music's constantly changing dynamics tend to mask some of the unwanted variations.

However, although chip designers realize the importance of calibration, apparently some CD player manufacturers do not. Some CD players are not even designed to make use of the calibration pins on the D/A converter chip. Perhaps even worse are the well-documented instances where, despite provision for calibration, some players evidence no attempt at adjustment; during production the calibration is often overlooked or set incorrectly. Many researchers and audio critics have found cases of calibration trim pots simply set in the middle of their adjustment range—a very suspicious alignment.

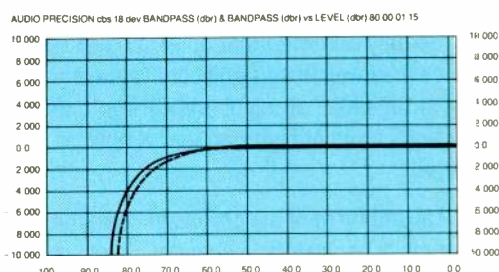


# Linearity measurements

Although the audible effects of non-linearity may be somewhat subtle to some listeners, the results of poorly calibrated D/A converters are plain to see.

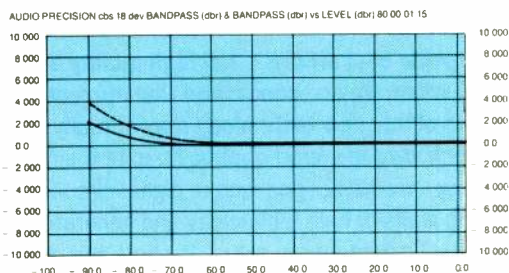
The following graphs, all containing information about the accuracy of various D/A converters, were plotted on a sophisticated computer-driven test instrument that shows any inaccuracies as a deviation from an ideal "straight line" response.

For example, the figure below shows a CD player with inaccurate conversion, particularly at levels lower than  $-60$  dB where both channels begin to show considerable nonlinearity.



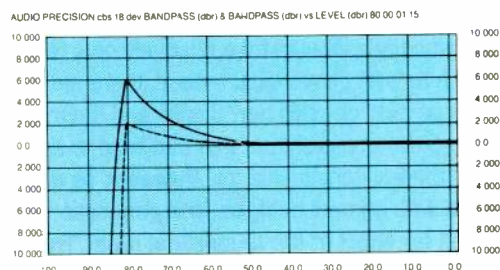
As you can see, a  $-70$  dB signal reproduces at an amplitude of  $-71$  dB, and a  $-80$  dB signal at  $-84$  dB. At  $-90$  dB the nonlinearity is even more considerable. Clearly, this expansion of low level dynamics can alter critical background or ambient sounds that affect our perception of the acoustic environment in which the music was recorded.

The next figure shows another CD player with a different kind of nonlinear output.



Here, a  $-70$  dB signal reproduces at  $-69$  dB, a  $-80$  dB signal at  $-79$  dB or  $-78$  dB (depending on the channel), and a  $-90$  dB signal at  $-88$  dB or  $-86$  dB (again, depending on the channel). This non-linearity results in compression of low level information. Again, the affect could be audible.

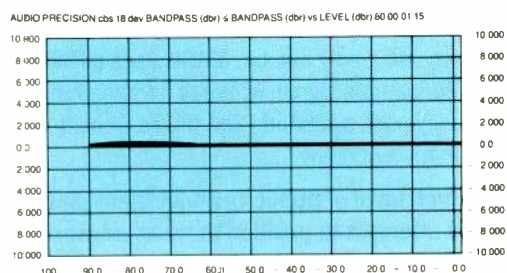
The following figure shows a CD player with extreme nonlinearity problems.



Here, the D/A converter compresses the output signal through  $-80$  dB, then suddenly expands it in a radical manner. Any low level audio waveform reproduces in a highly nonlinear fashion. The resulting distortion could greatly detract from the overall fidelity of music reproduction.

From this, we can easily see that unless the manufacturer is willing to purchase high quality converters and adjust them during production, the results can be highly unpredictable and unsatisfactory. On the other hand, when good converters are individually calibrated using the MSB adjustment described above, the results can be impressive.

For example, the next figure shows the output of a highly linear 18-bit CD player. Although there is a small error at the very low signal level of  $-90$  dB, it is barely measurable and is not audible.



The secret, then, is careful D/A converter selection, and calibration of individual converters in each player. By adjusting the four most significant bits, or the MSB itself, linearity can be greatly improved. Tests show that this also improves the fidelity of the audio signal.

**Clearly, the number of bits in a D/A converter is usually not the most relevant measure of its quality. In fact, it is a somewhat artificial way of determining conversion quality.** Certainly, an 18-bit converter would be preferable to a 16-bit model, but only if the D/A converter is of high quality and properly calibrated. A poor 18-bit converter can be considerably inferior to a good 16-bit converter. As we have seen, it is adjustment for maximum linearity that most influences the bottom line—measured and audible performance.

# The new One-Bit architectures

Several equipment manufacturers are now proclaiming performance advantages for a relatively new "single bit" approach to D/A conversion. Indeed, there are several differences between this new design and the more mature conversion architectures that tend to support some of the less fanciful claims. **However, as is often the case with all new designs, first generation efforts often fall far short of the theoretical ideal. This is indeed the case here.**

First, a short recap is needed to understand what has and, perhaps more importantly, what has not been said about single-bit designs.

The mainstay of virtually all digital audio products is the so-called parallel conversion of audio data words, whether 16- or 18-bits. And for good reason. This architecture has proven to be highly successful. As we have seen, extremely accurate conversion results from careful D/A design and calibration. However, these D/A converters are expensive and the labor intensive calibration procedures add to the manufacturing cost. **Understandably, some manufacturers have been unwilling to expend this effort, and have developed alternative conversion systems which are less complex and thus less expensive than conventional designs.**

Two different approaches have emerged so far: MASH (Multi Stage Noise Shaping) and "bit streaming." Both methods convert sampled data to an analog waveform using only one bit. MASH uses a PWM (Pulse Width Modulation) signal, whereas bit streaming technology uses a related PDM (Pulse Density Modulation) technique.

**The high level of publicity about these single-bit designs attempts to position them as advances to existing conversion technologies. Unfortunately, it conveniently neglects some very real problems which may have a significant effect on the sound quality of CD players using this approach. Bluntly put, today's one-bit designs are examples of inexpensive and immature technologies masquerading as solutions to problems which have already been solved.**

One-bit designs claim theoretically perfect conversion linearity at very low signal levels. But, as we have already seen, conventional multi-bit converters offer performance very near this theoretical ideal. However, calibrated multi-bit designs do not suffer from some of the problems unique to the current generation single-bit architectures.

One problem is that single-bit processing is inherently "dirtier" than multi-bit designs in that the

quantization noise bands are potentially more intrusive. A technique called "noise shaping" uses highly sophisticated computations called algorithms to alter the noise spectrum of the signal. However, these algorithms are part of a rapidly emerging branch of applied mathematics and are not as well understood as some would have us believe. **In fact, proper implementation is difficult because of the complexity and high data rate of the algorithm's computation, but is absolutely crucial to successful one-bit operation. Without proper noise shaping, one-bit methods are far inferior to parallel methods.**

As an example of this somewhat unsettled situation, consider this: one of the leading developers of one-bit designs recently admitted that current noise shaping techniques may well pose significant "parasitic coupling" problems that might interfere with the natural reproduction of mid or high frequency musical information.

Jitter, caused by poor synchronization of the various reference clock oscillators in a digital circuit, is also of great concern. Current multi-bit methods divide the signal's amplitude into parts for conversion. One-bit methods divide the signal in time. Although this may seem an obscure point, many engineers are still not satisfied that most conventional designs have fully dealt with the audible effects of clock speed variations. The higher operating speed of one-bit designs raises this question to a new level of importance in that any time-axis variations introduced by clock jitter or other noise are of a proportionately larger magnitude. **In short, jitter could disastrously disrupt a one-bit system.**

**Although we firmly believe that one-bit architectures offer exciting possibilities and one day may provide cost efficient and high quality audio reproduction, we are concerned that current versions of this new technology may actually be a step backward in sound quality.** Despite their efficiency, one-bit designs require digital circuits which push the limits of chip technology and generate an extremely high frequency signal. In short, this new technology has already revealed problems of its own. High quality 18-bit converters with proper calibration already offer essentially perfect linearity without the teething problems outlined above.

**Right now, the single biggest advantage of one-bit designs is that they are cheaper to produce! Onkyo does not feel that the consumer is well served by playing the role of guinea pig for the sake of manufacturing economies.**



# Conclusion

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Despite all the hype, a few simple facts are all that's needed to evaluate CD player technology.

1) The oversampling rate in a digital filter determines the placement of the quantization noise images. The higher the oversampling rate, the higher the placement, and hence the less critical the analog filter.

2) The number of bits in a digital filter per se is not important, as long as sufficient accuracy is maintained.

3) The greater the bit structure in a D/A converter, the greater the opportunity for higher conversion accuracy of the 16 bits of audio signal from the CD. However, the accuracy of any converter, whether 16 or 18 bits, hinges on the precision of its calibration. This can be easily determined by measuring D/A linearity.

However, the accuracy of any converter, whether 16 or 18 bits, hinges on the precision of its calibration. This can be easily determined by measuring D/A linearity.

4) So-called 1-bit systems have been developed, but their success is still not determined. One thing is clear: a well-calibrated 18-bit D/A conversion system can provide near-perfect reproduction of a digital audio signal. Onkyo believes that the design and calibration used in its players with either 16- or 18-bit converters approaches this ideal performance without encountering problems unique to one-bit architectures.

## References

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The following list is by no means complete but it does represent a good starting place for anyone who wants to understand the complexity of today's, and tomorrow's, world of digital audio.

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Ever wonder what happened to "cycles per second," or "cps," as they were abbreviated until pretty recently? This obvious name for an easy-to-understand phenomenon was changed a few years ago to honor a man for his experiments on electrical wave propagation and measurement. It is quite customary in the scientific world, and especially in the fields of electricity and acoustics, to name physical quantities after their inventor. Electrical quantities such as the watt, coulomb, joule, maxwell, farad, and henry are all named for their prince of discovery. And the three parameters most used by electrical engineers—potential, current, and resistance—are measured in volts (after Volta), amps (after Ampere), and ohms (after Ohm).

The concept of frequency was not so obvious a century ago as today; only a few scientists had any idea of the basic nature of electric and magnetic fields. One was James Clerk Maxwell, who in about 1864 predicted the existence of electromagnetic waves, using what we now know as the Maxwell field equations. These equations form the basis of electric and electromagnetic field theory, of modern radio, radar, telegraphy, television—indeed, of all wireless communication. But they were given only in theory, with Maxwell and his colleagues offering no practical application at the time.

In 1878, Heinrich Rudolf Hertz (like Maxwell a theoretical physicist not prone to doing experimental research) began taking an interest in experimental activities while studying under Hermann von Helmholtz (the Helmholtz resonator!) at the University of Berlin. In fact, Hertz had decided not to study engineering, believing it was too practical for his interests. Under Helmholtz, Hertz wrote his doctoral dissertation on "Induction in Rotating Spheres."

By 1883, Hertz was an instructor at the University of Kiel. He began to take a more serious interest in Maxwell's theories. While teaching and studying, he furthered his plan to experimentally confirm the propagation of electromagnetic waves. In 1885, he was appointed professor of physics at Karlsruhe Polytechnic Institute, where his major research was done. It was at Karlsruhe that Hertz produced electromagnetic waves in the laboratory, and he succeeded in measuring their length and velocity. He showed there



## Heinrich R. Hertz and the Discovery of Electromagnetic Waves

was a natural vibration related to the charging rate on the plates of a capacitor in a circuit and to the natural inductance of the wires. Hertz performed "tuning" of the system by adjusting the distance between wires connected to the parts, and showed that the "tuning" could optimize the natural resonant frequency. His crude experimentation confirmed the calculations he had made regarding the charge rate, the electric field level between the plates, the electromagnetic field around the coil (Hertzian dipole), the rate of oscillation (or tuning), and the damping, or decay, of the alternating charge's vibration.

Other experiments led Hertz to understand that electromagnetic waves obey the laws of refraction, reflection, and polarization. Their propagation characteristics were the same as those of light, except for the large difference in wavelength. He had thus confirmed that light was really just a form of electromagnetic radiation.

Hertz's scientific papers were translated into English and published in three volumes: *Electric Waves* (1893), *Miscellaneous Papers* (1896), and *Principles of Mechanics* (1899). After an illness brought on by blood poisoning, Hertz died in Bonn in 1894.

Like that of so many 19th-century scientists, Hertz's work was the inspiration for those who followed. His experiments with zinc spheres (which comprised the capacitor of his reso-

nant radiating system) intrigued a young Italian physicist, who thought the alternating electromagnetic waves created by a Hertzian dipole could be detected from a great distance. After demonstrating this was so in 1895, Guglielmo Marchese Marconi was able to detect transatlantic signals in 1901. For his efforts, Marconi received the 1909 Nobel Prize in physics.

These beginnings are the foundation of the vast continuum of wireless industries we know today: Radio, TV, radar, satellites, cellular telephones, radar speed detectors, garage door openers, remote controls for VCRs, and so on. Get the picture? So much of today's technology is an outgrowth of the wave theories and experiments of Hertz, Marconi, and Maxwell. Hertz's theories are the basis for today's microwave ovens, radar systems, and high-frequency amateur radio transmitters. The bounty and abundance we enjoy today would have arrived much later had it not been for Hertz and his compatriots, the great researchers of the late 19th century.

And back to cycles per second! In 1935, the International Electrotechnical Commission, a very powerful international standards-setting body, recommended that cycles per second be replaced by hertz as the unit of frequency. In 1948, Heinrich Hertz was once again honored when the worldwide General Conference on Weights and Measures adopted the term. The symbol for frequency became Hz—kHz for kilohertz, MHz for megahertz, etc. Over the past 40 years, textbook authors, institutions, manufacturers, and many others have come to accept the hertz. It is rare that one would not find it used in print nowadays.

In audio, the most-referenced frequencies in specifications sheets and product literature are the audible band and household electric current. The audio band is usually given as 20 Hz to 20,000 Hz (or 20 kHz); this represents a wavelength range of 56 feet to two-thirds of an inch in air, and 9,300 to 9.3 miles on wire. Household electricity's frequency is 60 Hz in the U.S. and 50 Hz in some other countries; it has a wavelength on wire of 3,000 miles.

So isn't it fitting to honor Herr Hertz a century after his groundwork contribution to the study of electric and electromagnetic wave motion? Long live the hertz!

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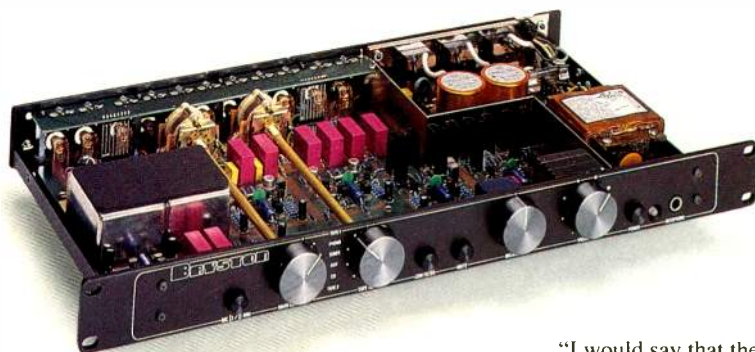
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## Auto Reverse

*Q. I note in the Audio "Annual Equipment Directory" that many decks are listed as not having automatic reverse—even the most expensive ones. To me, auto reverse is like an automatic transmission compared with the old clutch type in automobiles. I would appreciate information on this—Glenn Callendine, North Canton, Ohio*

A. I doubt that comparing auto reverse with an automatic transmission is a good analogy. With rare exceptions, decks do not perform equally well in both directions. Wow and flutter tend to differ in each direction. Probably more important, azimuth alignment tends not to be equally good, resulting in impaired treble response in one direction or the other. However, auto-reverse decks have steadily improved, so you may find something on the market which is satisfactory for your needs.

## About Dolby HX and HX Pro

*Q. Please briefly explain the function of the Dolby HX system. What does it add over ordinary Dolby B NR? How does HX differ from HX Pro? Why was Dolby HX discontinued?—Michael R. Witas, Whitefish Bay, Wisc.*

A. Dolby B NR and C NR are noise reduction systems. Dolby HX and HX Pro seek to prevent tape overload at high frequencies; they are independent of Dolby NR.

Bias current, typically 100 kHz or higher, is required to maximize the signal recorded on the tape and to minimize distortion. Unfortunately, bias has an erasing effect that increases with rising signal frequency and amount of bias. To help compensate for bias loss and for other magnetic losses, substantial treble boost is employed in recording. Such boost may raise the treble level high enough to saturate the tape, resulting in distortion and treble loss, sometimes called fold-over. Many combinations of bias and treble boost can produce flat response. The deck manufacturer seeks an optimum combination—one that results in satisfactorily low distortion and does not require excessive treble boost. The slower the tape speed, as in cassette decks, the more difficult it is to achieve this optimum level.

HX Pro is based on the idea that some of the required bias for satisfac-

torily low distortion is supplied by the high-frequency content of the program material; the rest and major part, of course, is supplied by the deck's oscillator. To the extent that program material supplies some of the bias, the amount required from the oscillator can be reduced. Less oscillator bias signifies that less treble boost is needed, which reduces the risk of tape saturation; in other words, more headroom for high frequencies is attained.

Accordingly, HX Pro reduces oscillator bias in proportion to the amount of high-frequency content in the program material. It seeks to keep constant the sum of oscillator bias and the biasing effect of the high-frequency content.

Dolby HX was a short-lived, more complex scheme which sought to reduce both bias and treble boost in the presence of strong high frequencies. It seems that HX was too complex to work well—particularly in consumer equipment, where cost is important.

## Flatness of Response

*Q. Why is it that the accuracy with which various equalizations are achieved is not the same? In the case of phono preamps, equalization is such that response is typically within  $\pm 0.2$  dB, whereas for the best tape decks, it is  $\pm 3$  dB from 20 Hz to 20 kHz. Should the tape medium or the heads be blamed for this?—C. Rama Murthy Hyderabad, India*

A. Phono equalization is a matter of one or two equalization circuits in a preamp, receiver, integrated amplifier, or tuner/preamp. Through careful selection of resistors and capacitors, it can very accurately conform to the RIAA phono playback characteristic. The response of a tape deck is dependent on many more factors: Record equalization, playback equalization, amount of bias current in recording, correct azimuth alignment, narrowness of the playback head gap, magnetic characteristics of the tape, and when Dolby noise reduction is used, correct matching of the record and playback levels to ensure flat treble response. **A**

If you have a problem or question on tape recording, write to Mr. Herman Burstein at AUDIO, 1515 Broadway, New York, N.Y. 10036. All letters are answered. Please enclose a stamped, self-addressed envelope.



## BAROQUE 'N' RECORD



A few months ago, I received a note from an old friend risen high, Jac Holzman, chief technologist for Warner Communications, chairman of the board of Cinema Products, ex-chairman of Panavision, and without a doubt a top mogul in a dozen or so further corporate ensembles. I knew Jac Holzman when he was an aggressive and determinedly bright kid of 19 or so, approximately penniless. The elevation, you can see, has been large. Holzman included a sheaf of equipment leaflets from one of his companies, Cinema Products (he wrote on the stationery of still another, First Media), just for my general interest. Lavish color displays of equipment, very much like those in our own professional equipment industry.

Was I interested! It's one thing to peruse the publicity in a field that at least is moderately familiar, as audio is to me, and quite another to barge into a wholly new area, right at its technical center. Absolutely awesome, this cinema gear—incredible machines that are not cameras but auxiliary to them. It took me awhile to realize that these huge agglomerations of gears, wheels, and motors were developments of the simplest originals—the camera tripod, for instance.

These machines are the present stock-in-trade for that huge film industry which turns out most of our big movies of all sorts, plus a remarkably large part of the originals for big-time video—whether TV, cable, VCR, or any other format, including, of course, the video ad.

From his position in the film biz, I learned by reading the brief Holzman article, my old friend is very much concerned with the crucial battles now going on between the present two utterly different technologies in the moving-picture business: The electronic video picture, analog or digitalized, and the long-established and highly developed film technology, out of George Eastman and Thomas Edison. It seems to me significant that Holzman is adamantly on the film side of this argument, particularly in respect to the present agitation over new "high-fidelity" video standards, as proposed (as usual) by the Japanese. That might seem conservative, but Jac Holzman is no conservative. Far from it. There are better reasons.

Holzman is one of those people—as I could begin to see even in his penniless stage as a kid—who grab opportunity with lightning speed and foresight, while the rest of us just sit and

gape. He's the guy who always gets the best seat in a game of musical chairs. One must look at such people with wary respect—now what are they up to? Where they move, lightning fast, others are extremely likely to follow, later or maybe too late. So why is Holzman now into film technology? *Hmmm*, is my thought. Interesting.

A good many readers will recall that Jac Holzman has not been exclusively a film man, and hence the reason for writing these words. He is another of audio's recent pioneers, a man of great enterprise and success in the recording business. For years, he was all audio—his own record labels—and not a picture in sight (if you discount public relations). This gives me a fine excuse for writing, and I intend to follow through on his *Broadcast Magazine* article when the proper permissions are in place. (One does not borrow other people's work without a good reason for comment.) First, then, a look at the Holzman audio background, another big part of audio history.

The present film equipment magazine, if I can call him that, began his obviously meteoric career producing LP and 45 records from tapes, via his own new labels. You know them today—Elektra and Nonesuch, the first generally pop, the second generally classical. He started Elektra still technically a kid, and on a good deal less than a shoestring. (He tried to borrow \$200 from me, and I indignantly refused!) From its tiny start, Elektra took right off—one of the first of the new "hi-fi" LP and 45 stereo labels, like today's all-CD labels. Remember The Doors? That was one group in the Elektra stable, and there were plenty more.

Then, a few years later, Holzman went on, with a big tad more capital in his till, toward a venture he once told me had been his ambition from the beginning: A classical LP label, Nonesuch. That was in the early '60s. The LP was in its second florescence after more than a dozen years, sparked by the big changeover to stereo. Nonesuch was neatly timed, just as stereo playing equipment began to straighten itself out from the mess occasioned by the new two-channel consumer hi-fi, so that mass stereo sales had become practicable, yet before the stereo medium had really explored new market-

Illustration: Monica Smith



ing possibilities. In its first years, Nonesuch produced dual releases, mono and stereo, both necessary while mono equipment continued to exist. But stereo was the base.

In the 10 years between the introduction of the LP, then the 45, and the advent of stereo on disc, when Holzman was a child, a new dynamic force entered the musical end of recording, thanks to tape. I can very well remember the excitement, for me at least, of the many new LP labels that sprang up to complement the old standard outfits—Victor (RCA), Columbia (CBS), and the other 78-rpm biggies, Decca and Brunswick here and His Master's Voice (HMV) and plenty more in European imports. We had always had these imports, from the earliest electrical days, and for many of us, they were the chief source of the more esoteric (as some would put it), larger area of music that lay outside the standard concert stuff that was mostly available on big-company 78. Now, with early tape, all sorts of novel "travelling" record labels hauled recorders into an astonishing variety of places and brought out the results on mono LP. I remember vividly, for instance, the successive releases of the once-unique Haydn Society, delving into great quantities of Haydn which most record collectors (not to mention live audiences) had never heard before and never expected to hear. (The standard critic's phrase was, "It has not maintained a place in the repertory.")

This spate of utterly new material, almost exclusively from Europe and played largely by unknown musical organizations and soloists (unknown, that is, to us), was a sensational thing, opening up all sorts of new musical perspectives for the listener.

But from a present-day audio viewpoint, that market was smallish, and the sound was not much—tolerable, if you were really interested. In fact, it varied from reasonable to awful. So did the LP pressing. We had yet to refine our vinyl to a point where what I used to call a forest of ticks—not bugs, but noises—and an obtrusive hiss—combining surface noise, tape hiss, and hum—made listening sometimes worse than a mediocre 78. There was still plenty of recorded distortion, and pitch was notoriously wobbly—some-

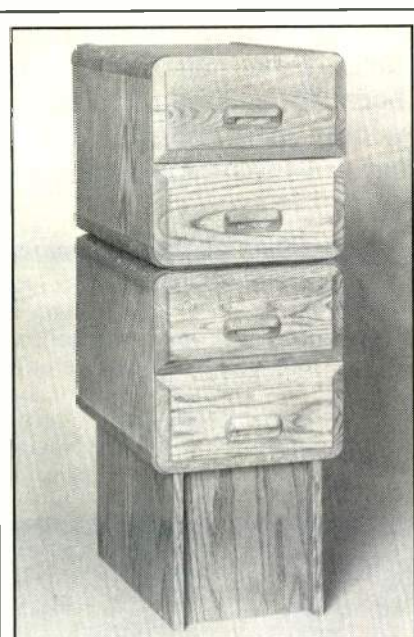
times shaky, sometimes determinedly off from beginning to end, this thanks to unstable and unknown current sources at the nominal 50-cycle a.c. rating used in Europe. No—no handy rechargeables then.

So this material was new but not yet for the multitudes. The LP catalog grew mightily but, if I am right, sales were not *that* good. Enough to keep the small labels going; not enough to build fortunes on mass production.

With his usual sense for having the right idea at the right time, young Holzman realized correctly (as I see it) that with the wider musical vision of stereo and the improving quality and quantity of both records and equipment, the time was ripe for a much bigger musical expansion via stereo; that indeed millions in the U.S., millions of *us*, were ready to bust out all over and, at the right price, buy up almost anything and everything *not* in the standard classical repertory! So true, so true.

Elektra and Nonesuch were hardly the only outfits of their type, I hasten to say. Some—like Vox, for example—had a long technical precedence in point of time, and there were the burgeoning record clubs, some catering in that format to the same opportunity, setting prices for maximum appeal. Even so and nevertheless, I have always felt that they were following on the marketing heels of Holzman, who did it first in stereo—if by a few hairs and dollars. In terms of market upheaval, in terms of new musical audience, Nonesuch was the outstanding classical success of the day.

As the fastest moving company, Nonesuch did indeed find an extensive new audience for records—particularly among young people of college age, not yet musically committed but avid for anything new to listen to in stereo or even mono. And so I credit this label (yes, I was involved in the backside annotations) with a profound influence on our classical tastes to this day. Nonesuch brought the hugely diverse music of the Europeans and especially the so-called baroque (Vivaldi, Telemann, Bach, Handel, and a host of others) to an American market that had been dominated, both on records and in concerts, by the "50 pieces," as Virgil Thomson called them—the standard symphonic repertory.



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Intended or no, baroque is largely Jac Holzman's baby because he made this music widely available to a very significant new audience.

As we all know, baroque became a major classical fad, an all-out craze that affected mainly the younger listeners of that time and thus altered our whole future perspective on music of the past. Now the young "college" people (many weren't) have metamorphosed, after a quarter century, into

middle-age affluence and still are enthusiasts for baroque and plenty more. Now they enthuse also for our current upscale equipment, which, shall I say, is for them affordable.


These same record buyers, without knowing much about it, have really solidified our interest in the baroque big

beat, so good for the recorded medium, and the apt amplification that brings small-scale music to us as forcefully as the big concert works. By now, these things have thoroughly penetrated our musical consciousness, and (predictably) on into the commercials—fake baroque, composed to fit. Even on the harpsichord! You hear it everywhere. Just try some recent airline ads. It's pretty sad, this commercial baroque (and never longer than one minute!), but it has the popular baroque sound all right. The ads, I might add, always chime right in—20 years late. Even Mozart hasn't yet been able to unseat baroque.

Jac Holzman single-handedly, in a metaphoric sense, had a lot to do with this very baroque phenomenon. Even if perhaps by accident, at the time. He first built up the Nonesuch label from licensed European tapes, and that's where the baroque came from, take it or leave it. Intended or no, baroque is largely his baby because he made it widely available to a significant new audience.


True, people like myself, inside music, discovered this music much earlier. We called it "old music." But we were musical freaks, very esoteric. The Nonesuch audience was America.

My further suggestion is that the present wave of CD expansion—with even more "unknown" performers, still more musical treasures unearthed into sonic reality—is very obviously parallel to that earlier wave of LP stereo in which Jac Holzman was a prime mover. That makes him a sort of industry grandfather today, as the second wave moves on to its new frontiers.

Nonesuch and Elektra still exist as part of a complex of labels, but they are different in a different time. When Nonesuch went to Warner Communications, Holzman was not exactly kicked upstairs—he shot, self-propelled, straight into the managerial stratosphere from which, you can guess, he reaches a long finger down into his old business whenever he fancies. I seem to see the evidence, now and then. Meanwhile, it's on to ever more mogulish occupations as Warner Communications combines with Time Inc. Including, maybe, retirement. And thence further into cinema? Good place to retire. 



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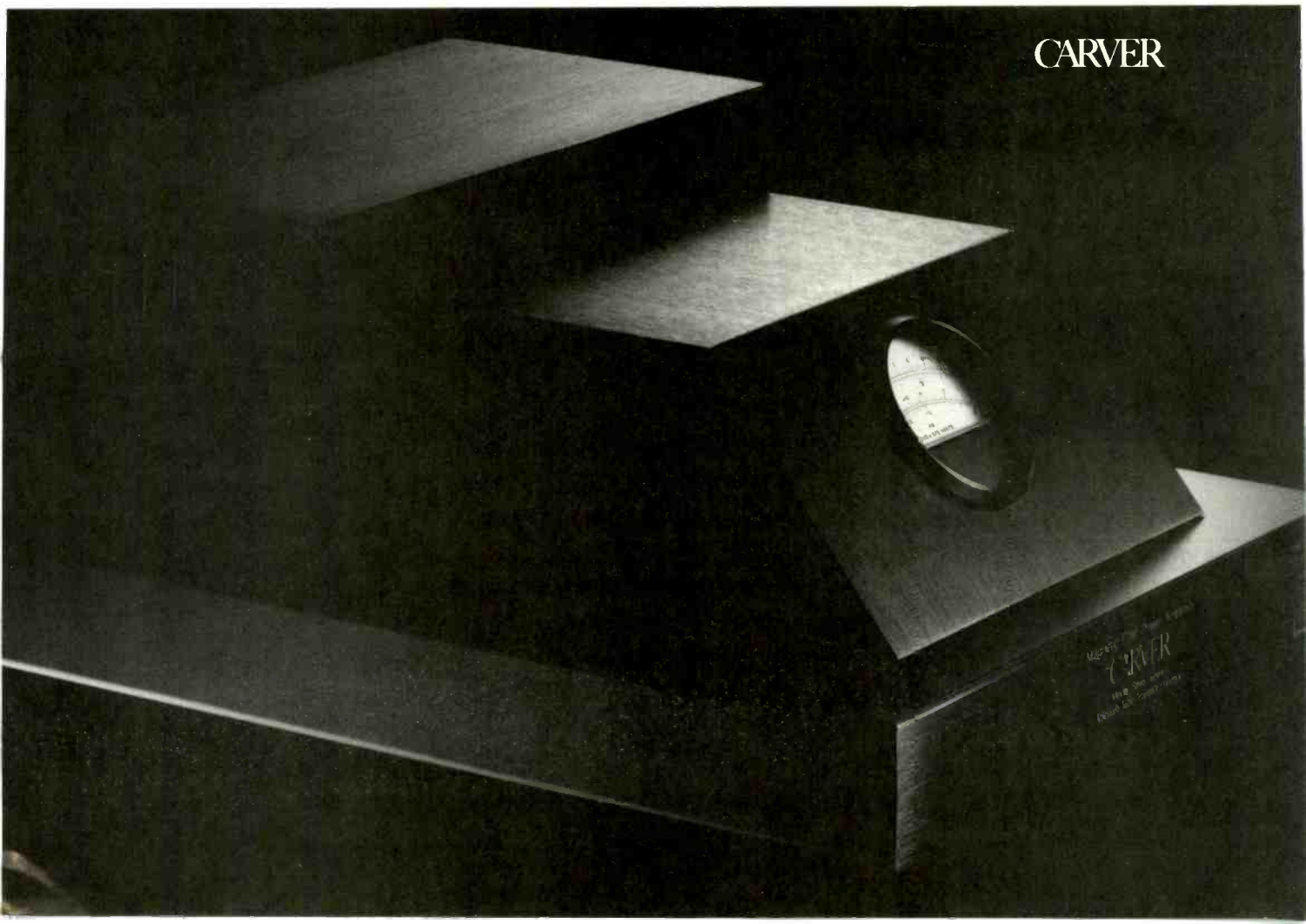
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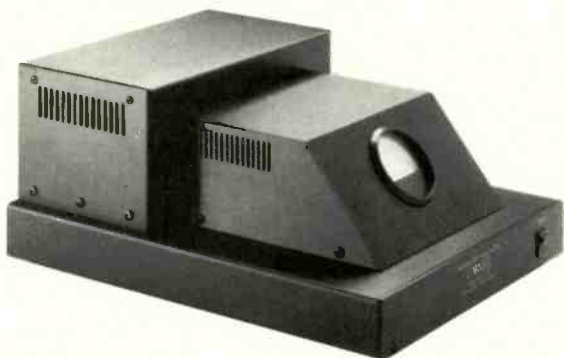
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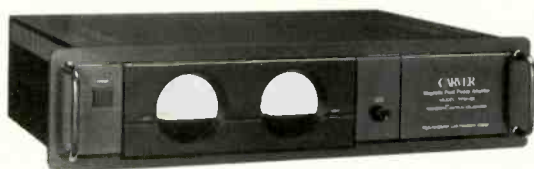
## Silver Seven-t



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- Analog power meter

## TFM-45



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- **375 watts min. RMS/channel into 8 ohms, 20-20kHz with no more than 0.5% THD**
- 500 watts RMS/channel into 4 ohms, 20-20kHz with no more than 0.5% THD
- 1000 watts bridged mono into 8 ohms, 20-20kHz with no more than 0.5% THD
- Analog power meters

## TFM-42



### Simultaneous High Current/High Voltage Magnetic Field Power Amplifier

- Silver Seven t-mod design
- **375 watts min. RMS/channel into 8 ohms, 20-20kHz with no more than 0.5% THD**
- 500 watts RMS/channel into 4 ohms, 20-20kHz with no more than 0.5% THD
- 1000 watts bridged mono into 8 ohms, 20-20kHz with no more than 0.5% THD
- LED power meters

## TFM-25



### Simultaneous High Current/High Voltage Magnetic Field Power Amplifier

- Silver Seven t-mod design
- **225 watts min. RMS/channel into 8 ohms, 20-20kHz with no more than 0.5% THD**
- 350 watts RMS/channel into 4 ohms, 20-20kHz with no more than 0.5% THD
- 350 watts bridged mono into 8 ohms, 20-20kHz with no more than 0.5% THD

## TFM-22



### Simultaneous High Current/High Voltage Magnetic Field Power Amplifier

- Silver Seven t-mod design
- **225 watts min. RMS/channel into 8 ohms, 20-20kHz with no more than 0.5% THD**
- 350 watts RMS/channel into 4 ohms, 20-20kHz with no more than 0.5% THD
- 350 watts bridged mono into 8 ohms, 20-20kHz with no more than 0.5% THD
- LED power overload indicators

## Magnetic Field Power Amplifier Technology

Quite simply, Carver power amplifiers deliver more current, more power and more voltage than competitively-priced designs. They also deal with the *true* realities of overall speaker impedance. While many amplifier designs claim "low impedance capability" their output voltage or current suffer in the process—all three specifications are linked by basic laws of physics. Carver Magnetic Field Amplifiers are capable of delivering both high voltage and high current simultaneously into the wide impedance range which typifies today's top loudspeaker designs. The key is Carver's patented power supply system, a *fully regulated* design of a type normally used only in esoteric aerospace electronic instrumentation. It can access more of each AC line voltage cycle and is able to draw 200% MORE CURRENT than conventional designs. With dynamic switching between three power "rails" depending on demand, and a distributed capacitance system which is able to achieve more joules of energy storage than traditional "soup cans", Carver Magnetic Field amplifiers can deliver up to 500% MORE CURRENT during musical peaks. At impressive power outputs and into a wide range of both resistive and reactive speaker loads.

## Transfer Function Technology

The "T" in Magnetic Field Power Amplifier model numbers signifies the t-modification process which Bob Carver has perfected over the last two decades. A process which can give you many of the sonic characteristics of a \$17,500 esoteric tube amplifier in solid state designs costing a fraction as much. Every amplifier design exhibits a unique relationship between its input and output signals. Like human fingerprints, this *transfer function* is subtly distinct, defining much of the sonic character of the design. Bob has perfected the art of precisely measuring an ultra-expensive, esoteric amplifier's transfer function, and then *closely duplicating* it in a different amplifier design! This process is not magic and cannot turn a low quality design into an audiophile power amplifier. In fact, the amplifier being "t-mod-ed" must, in many ways, be the equal of the design whose transfer function is being replicated. Only after these parameters are met, (as they have been in our new TFM-series) does Bob Carver apply his t-mod wizardry. Each design is "fine tuned" so that its transfer function closely matches that of the Silver Seven, Carver's well-received, ultra-high end, vacuum tube monoblock design.

## Preamplifiers

NEW FOR '89

### C-19



#### Vacuum Tube Reference Preamplifier

- 5 inputs including MM phono, MC phono and CD Direct
- Individual L/R tone controls with variable turn-over points
- Spectral Tilt full range tone control
- Dual external processor loops
- Dual tape monitors with dubbing
- Headphone output with speaker defeat switch
- Infrasonic filter
- Stereo/mono switch
- Absolute phase switch
- Headphone output

### C-16



#### Preamplifier with Sonic Holography\*

- 5 audio inputs including MM and MC phono
- Sonic Hologram Generator with Blend Control
- Individual L/R tone controls with variable turnover
- Spectral Tilt full range tone control
- Dual external processor loops
- Dual tape monitors with dubbing
- Headphone output with speaker defeat switch

### C-11



#### Preamplifier with Sonic Holography\*

- 5 audio inputs including MM and MC phono
- Sonic Hologram Generator with Precognition circuitry
- Individual L/R tone controls
- Loudness equalization
- Infrasonic filter
- External processor loop
- Dual tape monitors with dubbing
- Headphone output with speaker defeat switch

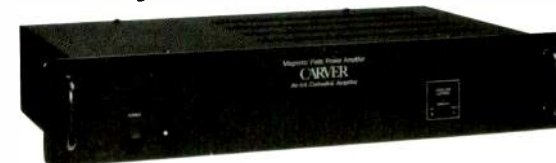
### H-9AV



#### Audio/Video Sonic Hologram Generator with Precognition Dynamic Video Sound Enhancement

- Adds Sonic Holography\* to any preamplifier, integrated amplifier or receiver with tape monitor or external processor circuitry
- Precognition circuitry for optimized video soundtrack Sonic Hologram Generation
- Precognition level control
- Vocal Zoom dialog processor
- Additional L+R and L-R outputs for advanced multi-channel installations

### AV-Sixty Four



#### 3/4-Channel Special Applications Magnetic Field Power Amplifier

- Designed for surround sound, multi-room and satellite/ subwoofer use
- 60 watts, 4 channels driven into 8 ohms, 20-20kHz with no more than 0.5%
- 100 watts, 4 channels driven into 4 ohms, 20-20kHz with no more than 0.5%
- 3-channel operation: 180 watts into 4 ohms, 20-20kHz with no more than 0.5% THD (ch. 1), 60 watts/channel into 4 ohms, 20-20 kHz with no more than 0.5% THD (ch. 3&4)
- Built-in 18dB/octave electronic crossover with 75 Hz turnover point
- Rear panel trim/balance controls

#### Sonic Holography\* Technology

Sonic Holography\* recreates sound the way nature intended us to hear it. By definition, conventional stereo cannot. During a live performance, each ear hears just one sound arrival from a sonic event. At home (because both ears are exposed to both stereo speakers), our ears receive two sound arrivals, one from each loudspeaker. This confuses our brain's neural processing, resulting in a collapsed sound field which is a pale imitation of natural sound. Sonic Holography\* detects, analyzes and cancels spurious second sound arrivals, restoring the wide spacial sound field of a live performance. The performance (or movie soundtrack) seems to engulf the listener with a sound field that is higher, wider and deeper than the loudspeakers.

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## Receivers

NEW FOR '89

### HR-752



#### Remote Control Sonic Holography Receiver

- 100 watts/channel RMS into 8 ohms, 20-20kHz with no more than 0.5% THD
- 5 audio inputs
- Sonic Hologram Generator
- Asymmetrical Charge-Coupled FM Detection circuit
- 20 FM/AM presets
- Preset scan and auto/manual tuning
- Motorized volume control
- 3-band tone controls
- Matrix surround sound synthesizer
- Dual tape monitors with dubbing
- Pre/main outputs
- Integrated remote control
- Remote compatibility with Carver CD Players

### HR-722



#### Remote Control Sonic Holography Receiver

- 60 watts/channel RMS into 8 ohms, 20-20kHz with no more than 0.5% THD
- 5 audio inputs
- Sonic Hologram Generator
- Asymmetrical Charge-Coupled FM Detection circuit
- 20 FM/AM presets
- Preset scan and auto/manual tuning
- Motorized volume control
- 3-band tone controls
- Dual tape monitors with dubbing
- Integrated remote control
- Remote compatibility with Carver CD Players

## Tuners

### TX-12



#### Remote Control Asymmetrical Charge-Coupled Detection FM/AM Tuner

- Advanced, logic-controlled Asymmetrical Charge-Coupled FM Detection circuit for dramatically reduced multipath and noise
- 20 FM/AM presets
- Preset scan
- Auto/manual tuning
- Stereo/mono switch
- Analog signal strength meter
- Dual antennal inputs
- Multi-function remote control

### TX-11b



#### Asymmetrical Charge-Coupled Detection FM + Stereo/Mono AM Tuner

- Ultra-High Performance Asymmetrical Charge-Coupled FM Detection circuit for dramatically reduced multipath and noise
- 13 FM/AM presets
- 3-week battery back-up preset memory
- Preset scan
- Auto/manual tuning
- Wide/narrow FM band selection
- New AM stereo circuitry
- Full 20-15kHz frequency and 70dB noise in AM Stereo tuning mode
- AM Gain and AM Noise Elimination circuits

### TX-10



#### Asymmetrical Charge-Coupled Detection FM/AM Tuner

- Asymmetrical Charge-Coupled FM Detection for dramatically reduced multipath and noise
- 20 FM/AM presets
- Auto/manual tuning
- LED signal strength meter

### Asymmetrical Charge-Coupled FM Detection Technology

Because FM stereo transmission is inherently prone to multipath interference, even the most "advanced" conventional tuner circuitry is forced to deal with a potentially flawed signal. Only Carver ACCD Tuner Circuitry is capable of restoring—literally transforming a multipath-ridden FM station into a clean, clear signal. It separates the FM signal's stereo (L-R) and mono (L+R) components, rejecting up to 80% of the fragile, distortion-filled stereo signal. The 15-20% of the signal which is "clean" is used to accurately recreate the rest of the stereo signal. You hear clean, clear FM with accurate frequency response, wide dynamics and ambient stereo information... even when a high portion of the L-R (stereo) FM signal is being ravaged by multi-path.



## Preamplifier Tuner

NEW FOR '89

### CT-17



#### Remote Control Preamplifier/Tuner with Sonic Holography and Dolby Pro Logic

- Dolby Pro Logic 5-channel surround sound processor
- Full remote control including rear channel volume
- Sonic Hologram Generator
- Asymmetrical Charge-Coupled FM Detector
- 20 FM/AM presets with preset scan, stereo/mono, auto/manual controls
- 2 video inputs with dubbing
- 7 audio inputs including CD Direct
- Hall and stadium effects synthesis
- Simulated stereo synthesis for mono video
- 3-way tone controls
- Dual tape monitors
- High cut filter
- Integrated remote control with separate input/recorder selector and extra remote volume control for room-to-room capability

## Compact Disc Players

### TL-3300



#### 18-Bit/8X Oversampling Remote Control Compact Disc Player

- 352.8kHz oversampling
- Dual D/A converters
- Digital Time Lens sound enhancement circuitry
- 22-track programming
- Search, repeat, skip, scan functions
- Full-function random access remote control
- Remote compatibility with Carver Receivers

### TL-3200



#### 16-Bit/8X Oversampling Remote Control Compact Disc Player

- 352.8kHz oversampling
- Dual D/A converters
- Digital Time Lens sound enhancement circuitry
- 32-track programming
- Shuffle play random music programming
- Delete programming
- Intro scan
- Search, repeat, skip, scan functions
- Full-function, random access remote with volume control
- Remote compatibility with Carver Receivers

### TL-3100



#### 16-Bit/4X Oversampling Remote Control Compact Disc Player

- 176.4kHz oversampling
- Dual Analog Filters
- Digital Time Lens sound enhancement circuitry
- 16-track programming
- Search, repeat, skip, scan functions
- Full-function random access remote control
- Remote compatibility with Carver Receivers

#### Dolby Pro Logic® and Sonic Holography®: Complementary technologies for video realism.

Pro Logic is Dolby's second generation in Surround Sound decoding technology. It provides the means to extract multi-dimensional information from stereo video soundtracks with an accuracy previously unattainable in consumer electronic components. Pro Logic is an active process designed to enhance sound localization through the use of high-separation decoding techniques. The system is a direct descendent of the one used in Dolby Stereo cinema processors. It uses a center channel output to complement left and right front channels as well as rear surround speakers (Carver refers to it as a 5-channel system because that's how many amplifier channels are required).

Because Sonic Holography® works on front channel stereo information, its enhancements are independent of Pro Logic surround sound (although it benefits from Pro Logic's ability to achieve better channel separation). A soundtrack which sounds impressive with Dolby surround sound will have even more width, depth and spectacular realism with the CT-17's Sonic Hologram Generator engaged.

#### Digital Time Lens Technology

A significant portion of analog-to-digital (AAD) compact disc releases exhibit audible differences when compared with well-mastered analog versions of the same recording. For various technical reasons, AAD discs often have 1) overall octave-to-octave energy balance shifted towards more midrange above 4kHz, 2) a significant reduction in the amount of L-R signal which provides crucial spatial information. Bob Carver's Digital Time Lens circuitry restores both the spectral balance originally intended by the musician and recording engineer while restoring ambient effects. The result is a warmer, more natural sound that places you in the same space with performers.

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## ALTERNATE ALGORITHM

In the October 1988 issue of *Audio*, I reported on the very sophisticated Wadia 2000 Digital Decoding Computer. Now, one year later, the Wadia 2000 has further evolved, with a number of significant improvements and updates, and there is also a new lower-cost processor, the Wadia DigiMaster Decoding Computer.

Anticipating the rapid developments in digital audio technology, the Wadia 2000 employed modular construction so that worthwhile advancements could easily be incorporated into the basic design of the device. As noted in the original article, the Wadia 2000 utilized proprietary "Frenchcurve" processing software—a digital decoding algorithm different from the digital or analog filter processing of conventional CD players and outboard D/A converters. The Frenchcurve algorithm was programmed into eight easily replaceable EPROMs (electrically programmable read-only memories).

Now Wadia has developed a new digital decoding algorithm known as "DigiMaster." Essentially, the new DigiMaster decoding software is a proprietary combination of decoding interpolation theorems, including a 12th-order Spline, optimized in the time domain. It combines the highly sophisticated decoding technology of the Frenchcurve with the heretofore difficult-to-implement technology of Spline decoding algorithms.

Spline decoding technology languished in the laboratory for a long time, principally because of the need for high computing speeds in a reasonably sized package (a condition fulfilled by the computing power of the Wadia 2000, at 72 million instructions per second) and the unfortunate ten-

dencies of Spline algorithms to "ad lib" (to supply data to digitized music waveforms when none was required).

It is difficult to give an analogy for a Spline, which, in the context of the DigiMaster algorithm, is a mathematical function. However, in ship-building language, a spline is a thin, flexible wooden strip used to draw the curves of a ship's hull on a design board.

Ongoing Wadia research found a way to overcome the technical constraints of conventional Spline programs. It is known that, for music reconstruction, a 12th-order Spline is extremely resilient. The DigiMaster software mixes in a Spline component that is the only polynomial known that presents second-order accuracy at the sample points—i.e., it regenerates the slope of the signal as it moves through the sampling points. This algorithm is optimized to reproduce transients and non-periodic impulses without ringing, and intertransient silence is better than analog.

Lately, there has been a lot of misleading information on a type of decoding known as  $(\sin X)/X$ . This is used by a number of D/A converters currently on the market. They are optimized around sinewaves, not the parameters of live music with its transients and impulses. These devices exhibit ripple in the passband, and there is no such thing as intertransient silence.

The "vogue" for  $(\sin X)/X$  decoding began when some "experts" stated that, according to the Fourier theorem, all signals are made up of sinewaves. Professor Fourier, of fast Fourier transform fame, was misquoted; what he actually said was, "If a time function is periodic [not a transient or impulse] and satisfies certain conditions, it may

be approximated in the frequency domain by sinusoidal components approaching an infinite number [which is obviously impossible], each having frequencies which are harmonically related to the fundamental." This means that the theorem wouldn't apply to frequencies above 11 kHz on a CD, since the first harmonically related frequency is out of band at 22 kHz.  $(\sin X)/X$  decoders measure as very accurate when tested with sinewaves or other steady-state signals, but they are still pushing their digital numbers through a brickwall digital filter, with its consequent generation of digital artifacts and spurious.

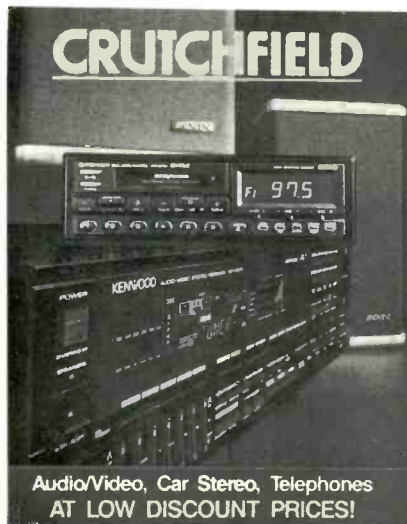
As was apparent from my original article on the Wadia 2000, I was quite amazed by the performance of this decoder in the playback of CDs, as compared to high-quality conventional CD players. In terms of a fuller, more open sound and greater ambience presentation, along with striking resolution of all orchestral instruments and immediacy of transient attack, listening to CDs became quite a revelatory experience. All of this was a consequence of hearing the CDs through the Frenchcurve time-domain decoding algorithm of the Wadia 2000.

I was quite happy with this very high level of CD reproduction. Then, a few weeks ago, Wadia sent me eight new EPROMs programmed with their new DigiMaster decoding algorithm. It took a matter of minutes to unplug the Frenchcurve EPROMs and replace them with the DigiMaster units. These DigiMaster EPROMs had been preceded by much technical information on the new algorithm, most of which I have reported on in the above paragraphs. As interesting as the technical data may be, as always, it is a question of whether the new technology translates into an improvement in sound quality.

Frankly, I didn't expect the sonic "lily" of the Frenchcurve to be "gilded" very much by the new DigiMaster software. Thus, I was a bit taken aback, but nonetheless delighted, when I found that the DigiMaster decoding further expanded the limits of sonic perception in CD reproduction and afforded a more probing, deeper, and clearer look into the heart of the music. An apt analogy is that of the 200-inch







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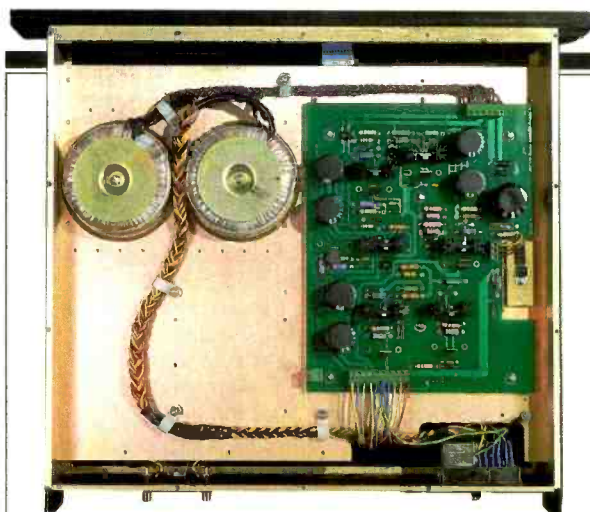
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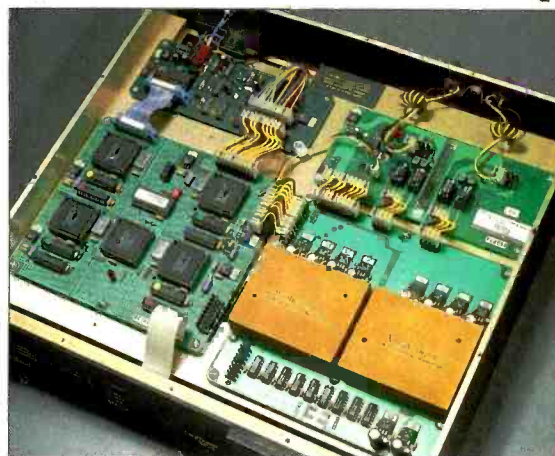
# CRUTCHFIELD

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I didn't expect the sonic "lily" of the Frenchcurve to be "gilded" very much by Wadia's new DigiMaster software. I was wrong.



Power supply section of the Wadia DigiMaster decoder. Note the large toroidal transformers (upper left).



The DigiMaster's digital and analog audio sections use summed-multiport transversal delay-line D/A converters (flat boxes at lower right).

telescope on Mt. Palomar. It can take us to the far reaches of the universe, but it will soon be eclipsed by a much smaller orbiting satellite telescope which, unimpeded by the obscuring veil of Earth's atmosphere, will provide a much brighter, clearer view of the heavens.

The DigiMaster decoding provides even more open and airy sound and greater ambience retrieval than its predecessor. This is dramatically apparent in playing the London/Decca CD recording of Tchaikovsky's Manfred Symphony performed by Chailly and the Concertgebouw Orchestra in their own Grote Zaal (Great Hall). The ambience presentation is so rich and realistic, it seems almost palpable! Psycho-acoustically, you are in the hall.

The DigiMaster decoding also excels in resolution of transient response. It brings a new dimension to piano sound, from bass keys through mid-range and top end, with transient attack so fast it can only be compared to

live piano. On timpani and bass drum, you can perceive the skin tone of the drumheads. On snare and bass drum rolls, the sound is not amorphous; each beat component of the roll is separate and distinct. Pizzicato strings, guitars, and harps all have instantaneous response. In addition, the DigiMaster decoding provides an overall smoothness of frequency response and a high degree of musical veracity that is quite beguiling. I hasten to add that DigiMaster will not improve poor recordings. In fact, it will lay bare the "warts" for all to see. With top-quality CDs, DigiMaster decoding clearly reveals how good these recordings can be.

The Wadia 2000 can be retrofitted with new DigiMaster EPROMs for a dealer list of \$495. Another upgrade for the Wadia 2000 is a fully regulated separate power supply for the Digilink 30 fiber-optic communicator. It will carry a dealer list price of around \$250. The latest upgrade for the Wadia 2000

DigiMaster decoding further expands the limits of CD's sonic range and offers a deeper, clearer look into the heart of the music.

is the most significant of all the improvements: A new buffer output for the analog signal provided by the D/A converters. The current Wadia 2000 models have non-buffered outputs, since the unit's designers subscribe to the "purist philosophy," which argues for fewer pieces of intervening electronics. This means short analog cables between the Wadia and the pre-amplifier, and high input impedances (47 to 100 kilohms) at the preamp input. Under these circumstances, the current and voltage output can comfortably drive the short cable runs (8 to 20 feet) to power amplifiers that are typically found in consumer audio.

On the other hand, professional users, who often employ cable runs up to several hundred feet and those who use cables which present difficult loads wanted Wadia to develop high-current, high-voltage buffer outputs for the Wadia 2000. In the course of research on this buffer, many measurements and much subjective testing indicated there were very considerable sonic benefits in using this type of output buffer in consumer CD playback, as well.

Once again, the modular construction of the Wadia 2000 enables easy installation of the new output buffer boards, which have 11 layers. Since the p.c. board traces are thin, power and ground planes were laid out as entire layers, not just surface traces, within the boards.

The new buffer output has a slew rate of 1,300 V/ $\mu$ S (the typical CD player has an output around 35 V/ $\mu$ S). The current drive capability of the buffer output averages 200 mA, with a peak output of 400 mA (a typical CD player has around 10 mA). The buffer has a voltage swing capability of 27 V peak to peak, with a power bandwidth of over 100 MHz. The buffer output rise-time is 3.6 nS (a typical CD player has an output rise-time of 1  $\mu$ S, which is 1,000 nS). The buffer has a settling time of 50 nS (typical CD players have settling times 1,000 to 10,000 times longer). The buffer is absolutely phase linear and is said to have no signal coloration. Output resistance of the buffer is 3 ohms and is designed to drive 600-ohm load impedances without signal degradation, but it can drive loads as low as 50 ohms.

An interesting aspect of the research on the buffer output was a study done on the digital coaxial outputs of typical CD players. It was learned that they vary considerably among different players. It was also found that few CD players conform to the Sony/Philips differential specifications; that is, the digi-

tal outputs of many CD players are not within tolerance for rise and fall times, pulse droop, or jitter. Many of the players have varying clock rates. You would be surprised how many CD players suffer these anomalies, including some expensive and prestigious units!

*"Music heard so deeply that it is not heard at all, but you are the music..." T.S. Eliot*



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The Wadia's new DigiMaster decoding algorithm and its buffered outputs are synergistic and make for remarkable performance.

I installed the new output buffer boards for the Wadia 2000 without incident. After burning in a while, I heard CD sound with a "meaty" authority and weight, an expanded soundstage, more depth perspective, and stunning dynamic expression. On really good CD recordings with wide dynamic

range, the effortless reproduction of great fortissimo passages was thrilling. Contrabass, bass drum, and organ pedal were very clean and had great sonority and impact. Massive brass fanfares were projected with visceral power by the Wadia DigiMaster Decoding Computer.

There is no doubt that the new DigiMaster decoding algorithm and the new buffered outputs of the Wadia 2000 are synergistic, which makes the resulting performance of the 2000 remarkable.

It should be noted that all future production of the Wadia 2000 will be equipped with the new regulated power supply for the Digilink 30 fiber-optic unit, the DigiMaster decoding software in the EPROMs, and the new output buffer boards. The dealer list will be \$7,750. As mentioned earlier, there is now a new processor, the Wadia DigiMaster Decoding Computer, which will sell for \$4,950. The new Wadia processor is a single-chassis unit with a massive front panel that permits rack mounting. It has an internal regulated power supply with toroidal transformers. The chassis itself uses heavy metal plate construction rather than bent sheet metal. The internal components and circuit topology are identical to the original Wadia 2000 (see "Behind the Scenes," October 1988, for details). However, it uses the DigiMaster decoding algorithm, has the same high-speed computer operating at 72 million instructions per second, provides 64-times oversampling, and uses the same proprietary 18-bit D/A converters. Input is from the digital coaxial output of a Compact Disc player (no fiber optics here), and output is unbuffered via RCA jacks.

Like the 2000, the Wadia DigiMaster decoder uses modular construction. Thus, the unit can be equipped with the new output buffer boards (which, in this case, include XLR balanced outputs) for a dealer list of \$750. With a total price of \$5,700—some \$2,050 less than the Wadia 2000—the new Wadia DigiMaster Decoding Computer provides virtually all of the facilities of the 2000 on a single chassis.

Is the performance of the new unit comparable to that of the Wadia 2000? There are subtle differences, possibly due to the lack of the fiber-optic communicator. I would say that on really high-quality audio systems, there would be more overall refinement and a somewhat smoother sound with the 2000. In matters of performance, however, no doubt many people would decide that both Wadia processors are kissin' cousins!

A

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Like other logic circuits, Dynamic Logic provides accurate sound placement within the designated soundfield using center channel for dialog as a reference point.

#### What Makes Dynamic Logic Unique ?

We have designed our steering circuit to handle the special parameters and listening habits normally found in a home... not a movie theater. In a small listening environment like the average living room or den, special attention must be paid to the room's dimensions and the available seating arrangements.

#### What Does Dynamic Logic Accomplish ?

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# Amplifier Review Highlights

3

## Audio

The Pro-Power Four amplifier represents another Soundcraftsmen innovation and advancement in power-supply design. The unique circuit employs what the company calls Phase Control Regulation, but it has nothing to do with audio phase response of the amplifier itself. Rather, PCR is a highly efficient means of controlling the average power supplied to the amplifier's output stages.

This method of regulating the power supply has a lot to do with the Pro-Power Four's power output capabilities. Most conventional amplifiers have poor supply-voltage regulation. As the load demands more power, the amplifier's d.c. supply voltages tend to drop. This can significantly reduce power output during operation at high volume levels, especially when dynamic peaks of more than a few milliseconds are encountered. Soundcraftsmen's approach differs from others in that they believe continuous power to be of greater importance to accurate musicality than peak power. The test of dynamic headroom which I perform on amplifiers involves the use of a 20-mS burst of a 1-kHz signal, followed by 480 mS of a 1-kHz signal at a level 20 dB lower. This is designed to replicate what happens to an amplifier when it is handling short-term musical peaks. Almost all amplifiers can deliver power levels well above their continuous ratings for such a short period. Soundcraftsmen's engineers maintain that accurate musical reproduction of the complex content of a very loud musical note requires far more than a 20-mS time frame. Thus, in their high-powered amplifier designs (of which the Pro-Power Four is certainly one), the emphasis is on maintaining high output power over the long term, or continuously, rather than for 20 mS as dictated by the IHF Dynamic

### Headroom test.....

The output stages utilize power MOS-FETs particularly suited to the high current requirements that are of such importance when reproducing digital program sources. The use of MOS-FETs eliminates the need for conventional current-limiting protection circuitry.....MOS-FETs are costlier than bipolar devices having similar power ratings, but the extra expense is evidently balanced out by cost savings in the Pro-Power Four's power supply (brought about by the PCR circuit) and by somewhat simpler mechanical packaging.....

### Measurements

Connected to 8-ohm resistive loads, the Pro-Power Four did not reach its rated THD + N of 0.05% until it was delivering 231 watts of continuous power per channel, both channels driven, at 1 kHz, as against only 205 watts claimed by Soundcraftsmen. For a 20-Hz test signal, output power for rated THD + N was 214 watts; at 20 kHz, output power reached 226 watts for the same distortion level. At the rated power output level of 205 watts per channel, THD + N measured a very low 0.004% at mid-frequencies, 0.005% at 20 Hz, and 0.018% at 20 kHz. SMPTE-IM distortion was only 0.005% at rated output; the amplifier could be driven to 233 watts per channel before the IM reading increased to its rated value of 0.02%.....

Damping factor at 8 ohms, referred to a 50-Hz test signal, was 205, allowing for the minimal resistance of my heavy-gauge speaker cables. Signal-to-noise ratio measured 82 dB referred to 1 watt output. Soundcraftsmen chose to quote S/N with respect to full rated output. Since 205 watts is 23.12 dB greater than 1 watt, that would put my reading relative to rated output at 105.12 dB, almost exactly the figure quoted by Soundcraftsmen. Input sensitivity for 1 watt output was

75 mV referred to 8-ohm loads.

CCIF IM (twin-tone intermodulation distortion) measured an almost imperceptible 0.0025% at 8 ohms and 0.003% at 4 ohms. Frequency response extended from 5 Hz to 60 kHz for the -1.0 dB roll-off points and from 2.5 Hz to 125 kHz for the -3 dB cutoff points.

### Use and Listen Tests

I hooked up this powerful amplifier to a variety of speaker systems, including my reference KEF 105.2s and a pair of B & W Model 300s. I even used a pair of fairly low-cost units, DCM's Time Frame TF250 speakers, being careful not to exceed their 100-watt maximum power rating. One way of describing the performance of this carefully designed amplifier is to say that it brought out the best in all of the loudspeaker systems with which I tried it. I sensed an effortlessness about the musical crescendos reproduced from some of my CD "spectaculars."

After having confirmed the fact that great gobs of dynamic headroom are not necessary if you have adequate continuous power available, I settled down to more musical fare and confirmed, in my own mind, what Soundcraftsmen in the final paragraph of a recent letter to me. "Above all else in importance is musicality. We have listened to A/B tests of each one of our MOS-FET amplifiers, including the Pro-Power Four, and in each case we find it absolutely impossible to detect any real difference in superb sound reproduction between our models and the very finest amplifiers made." I'll amplify this a bit and say that there is a major difference between the Pro-Power Four and some of the finest amps I've ever listened to. That difference is price! In my view, you can spend two, three, even five times as much as what the Soundcraftsmen Pro-Power Four costs but you won't get a better, more reliable, or more musical-sounding power amplifier. **Leonard Feldman**



# Mosfet Power Amplifiers

## Pro-Power Four

**DESCRIPTION:** The New PRO-POWER amplifiers are especially designed for the extended Dynamic Range requirements of today's Compact Disc players and Hi Fi VCRs. The ULTRA HIGH CURRENT design offers you incredibly high power without sacrificing distortion-free performance, superb reliability, and the utmost in sonic purity. These new amplifiers operate flawlessly under all operating conditions. It is well known that most of today's highly regarded loudspeakers exhibit impedance curves which drop to 1 or 2 ohms at some frequencies, and in conventional amplifiers this results in severe clipping and the triggering of protective circuitry. However, our new PRO-POWER Phase Control amplifiers continue to operate even under those extremely low impedance conditions. Current limiting had been eliminated entirely by the use of the latest POWER MOSFET technology, thus avoiding the sonic degradation typically found when limiting circuitry is employed.

**FEATURES:** MOSFET amplification stages provide the utmost in sonic purity, rivaling that of vacuum tube amplifiers...Precision-Calibrated LED power meters (0-400 watts at 8 ohms)...Speaker switching for two pair of stereo speakers...True clipping indicators for each channel...Ultra high storage capacity filter capacitors, as witnessed by True Clip lights remaining on for up to several minutes after turning AC power off...Professional rack-mount front panel...optional hardwood side panels.

**SPECIFICATIONS:** CONTINUOUS RMS POWER: 205 watts per channel @ 8 ohms, 20Hz-20kHz, 300 watts per channel @ 4 ohms, 20Hz-20kHz, 450 watts per channel @ 2 ohms, 1kHz...DISTORTION: THD—0.05% at rated power, 20Hz-20kHz, IMD—less than 0.05%...FREQUENCY RESPONSE: 20Hz-20kHz,  $\pm 0.1$ dB...SIGNAL-TO-NOISE RATIO: Minus 105dB...SLEW RATE: 50 volts/microsecond...DAMPING FACTOR: Greater than 200...PHYSICAL: 19"Wx5½"Hx12"D, 30 pounds...PRO-POWER ONE—8½"Wx5"Hx14"D, 20 pounds.

## Pro-Power Three

**PRO-POWER THREE:** If you desire all of the performance features of the highly acclaimed Pro-Power Four (see review highlights on page 3) without the LED power meters, select the Pro-Power Three.

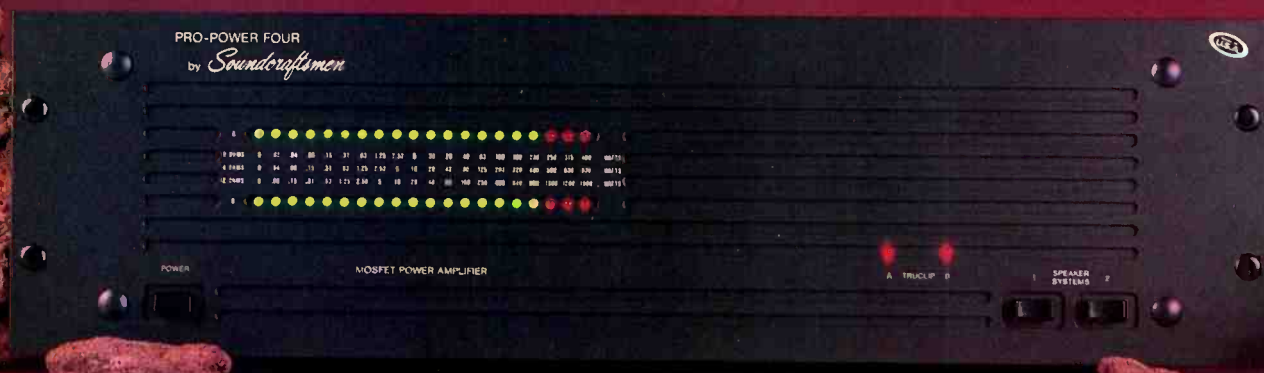
## Pro-Power One

**PRO-POWER ONE:** The NEW PRO-POWER ONE amplifier provides all of the performance features of the PRO-POWER FOUR (see review highlights on page 3) in a smaller, non-rack-mountable chassis.



## PCR800

The PCR800 amplifier is similar to the PRO-POWER ONE, rated at 205 watts per channel @ 8 ohms, but with plain overlay front panel.





# Pro-Power Ten 2/3/4 Channel

The New Soundcraftsmen PRO-POWER TEN 2/3/4 channel Power Amplifier stands alone, in a class by itself, in power amplifier circles. Designed and manufactured in the USA using State-of-the-Art MOSFET power output stages and our ultra-smart phase control power supply, the PRO-POWER TEN is your best buy in a power amplifier. The MOSFET amplification stages provide superior sonic purity, compared by many to that of vacuum tube amplifiers. Unlike most other supply designs whose supply voltage drops (and hence the amplifier's output capability) when operating at high volume levels

containing dynamic peaks of more than a few milliseconds duration, our smart phase control power supply adjusts its supply voltage to match the demands of the loudspeaker. Helping to maintain this constant supply voltage are ultra high storage capacity filter capacitors and two independent power transformers.

The PRO-POWER TEN front panel features four independent 12-segment LED power output meters (0-800 watts at 8 ohms) and True Clipping indicators for each channel. As in most all Soundcraftsmen components, the new PRO-POWER TEN features a Professional rack-mount front panel with optional hardwood side panels.

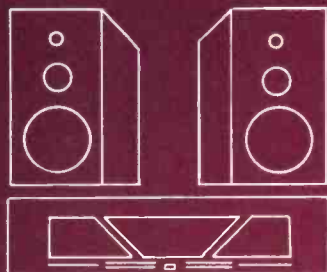
## SPECIFICATIONS

POWER: 205 watts per channel (4-channel) @ 8 ohms, 20Hz-20kHz, at less than 0.05% THD...300 watts per channel (4-channel) @ 4 ohms, 600 watts per channel (2-channel) at 8 ohms...IM Distortion: less than 0.05%...Frequency Response: 20Hz-20kHz,  $\pm 0.1$ dB...Signal to Noise Ratio: -105dB...Slew Rate: 50 volts/microsecond...Dimensions: 19" W x 5 1/4" H x 12" D...Weight: 55 pounds

## TWO-CHANNEL MODE

### 600 WATTS PER CHANNEL INTO 8 OHMS.

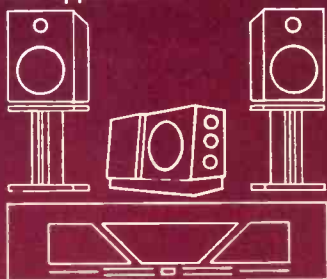
When the PRO-POWER TEN is used in this mode it is transformed into the ultimate in high power amplifiers...If your loudspeakers and/or environment require a lot of power, the PRO-POWER TEN is right for you.



Ultra High Power Systems

## THREE-CHANNEL MODE

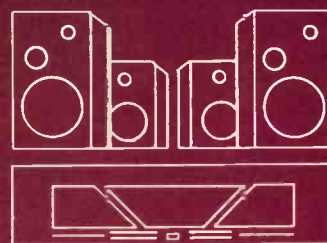
Many of the more modern loudspeaker systems have been designed primarily with the total living environment and/or integrated audio-video systems in mind. These systems incorporate a stereo pair of satellite speakers for reproducing the midrange and high frequencies. Since the very low frequencies are non-directional, and hence non-critical to proper stereo imaging, they are reproduced by a single, large sub-woofer. The PRO-POWER TEN in the Three-Channel mode is ideally suited to these applications.



Sub-Woofer/Satellite Systems

## FOUR-CHANNEL MODE

The ultimate in audio/video systems is the Surround Sound system, where the theatre environment is re-created in the home by utilizing front and rear speakers. The PRO-POWER TEN in the Four-Channel mode is the perfect match for these systems. Some higher quality loudspeakers benefit from bi-amplification, i.e. having separate amplifiers for their low frequency and high frequency components. The PRO-POWER TEN in the Four-Channel mode is equally well suited for these types of systems.



Surround Sound Systems



Soundcraftsmen, 2200 So. Ritchey, Santa Ana, CA USA. Prices and specifications subject to change without notice.

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# Pro-Reference Amplifiers

## Pro-Reference Two

**DESCRIPTION:** The new **PRO-REFERENCE TWO** Studio Monitor Amplifier was designed for those applications where sonic accuracy is the utmost goal. **MOSFET** output stages provide Ultra-High Current capability for effortless handling of low impedance loads.

As with all Soundcraftsmen amplifiers, the new **PRO-REFERENCE TWO** uses circuits designed with absolutely no current-limiting, thus eliminating the harsh clipping characteristics associated with current-limited amplifiers. The advantage of **non-current-limited** circuitry is sonically obvious when reproducing peaks at, near or over the onset of clipping.

Ordinary Recordings—even so-called "**audiophile discs**"—are often so limited in their dynamic range that even small, lightweight, low-powered, amplifiers and receivers can reproduce their musical information without serious problems.

However, **COMPACT DISCS** and the newer **DIGITAL FORMATS** have changed all that. Where 20 to 40 watts once was acceptable, not even double that power is enough to reproduce these new recordings without severe "clipping" distortion!

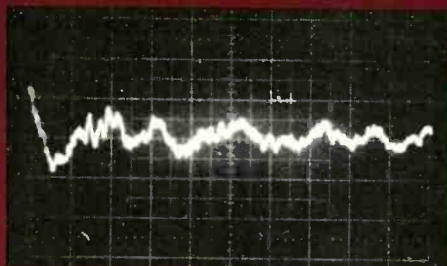
Designed specifically for this new technology, the **PRO-REFERENCE TWO** produces 100 watts per channel continuously with 8-ohm loads and 190 watts per channel continuously with 4-ohm loads and huge power reserves of more than 700 watts

are always available to reproduce the tremendous digitally-generated dynamic "peaks" with absolutely effortless clarity. More than enough power is available for these new wide-range Program Sources. Featuring the latest **POWER MOSFET** circuitry, the **PRO-REFERENCE TWO** offers power, unmatched reliability and the sonic purity of true "tube-like" mosfet amplification.

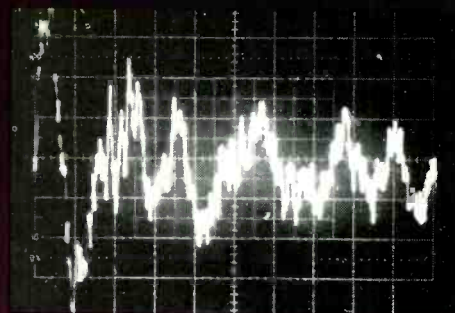
**FEATURES:** Precision LED output meters calibrated in dB from  $-\infty$  to +3dB (200 watts @ 8 ohms)...True clipping indicators for each channel which accurately detect and indicate any signal distortion...Rear panel connections for two sets of speakers with front panel selection of either pair of speakers or both...Professional rack-mount front panel...Optional hardwood side panels.

## Pro-Reference One

**PRO-REFERENCE ONE:** If you desire all of the performance features of the **PRO-REFERENCE TWO** without the LED power meters, select the **PRO-REFERENCE ONE**.



**CONVENTIONAL RECORD:** Oscilloscope photo shows music playing at normal listening level. Only 1 watt of power is required for average level, but 16 watts are needed to produce "peaks."



**DIGITAL AUDIO DISC:** Oscilloscope photo shows same music playing at same normal listening level. Again only 1 watt is required for average level, but 500 watts are needed to produce the "digital/dynamic peaks" without distortion!

**SPECIFICATIONS:** CONTINUOUS RMS POWER: 100 watts per channel @ 8 ohms, 20Hz-20kHz, 190 watts per channel @ 4 ohms, 20Hz-20kHz...DISTORTION: THD—0.05% at rated power, 20Hz-20kHz, IMD—less than 0.05%...FREQUENCY RESPONSE: 20Hz-2kHz,  $\pm 0.1$ dB...SIGNAL-TO-NOISE RATIO: Minus 105dB...SLEW RATE: 40 volts/microsecond...19" Wx5¼" Hx10½" D...25 pounds.



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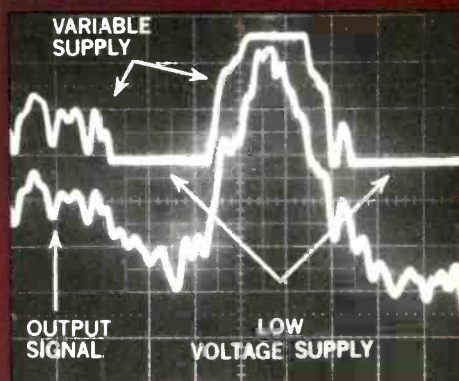
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# A5002 Amplifier

**DESCRIPTION:** Soundcraftsmen's exclusive CLASS H amplifier circuitry establishes a new standard for high-power stereo amplifier technology. Several integral design elements make up CLASS H: the Vari-Portional® dual signal-tracking power supply, Auto-Buffer® and Auto-Crowbar. Here is a brief explanation of CLASS H and its benefits.

**VARI-PORCIONAL® SYSTEM:** Conventional amplifiers utilize a single power supply which supplies whatever level of voltage is necessary at any given moment to produce the required power output, up to the supply's maximum. This design is inherently inefficient since most of the time the supply is operating at only a small percentage of its potential. This operating



condition causes high heat buildup with its related increase in distortion, as well as high wear and tear on amplifier components. The Soundcraftsmen Vari-Portional® system utilizes a low-power supply which operates very efficiently continuously, and a second, "signal-tracking" supply which operates only when actually needed, and only to the degree needed. In this design, no power is wasted in heat dissipation. The amplifier runs cool, distortion is reduced to almost unmeasurable levels, and reliability is dramatically improved.

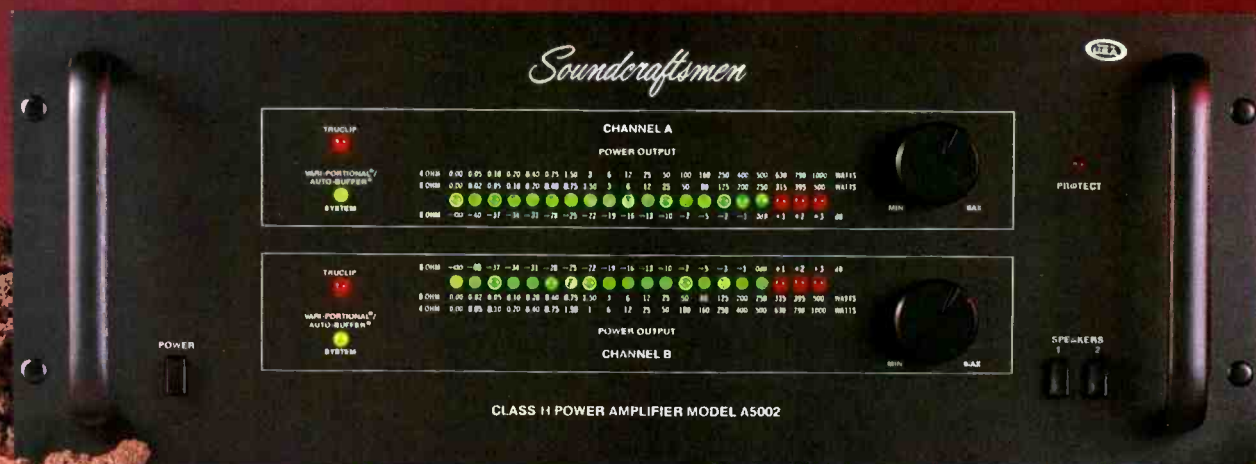
**AUTO-CROWBAR:** The Soundcraftsmen Auto-Crowbar protection circuit is unique among amplifiers. It uses no fuses, relays or circuit breakers. Auto-Crowbar detects any condition which might be harmful to the amplifier and instantly disconnects all A.C. power to the amplifier. Every few seconds Auto-Crowbar samples the output. If the problem which triggered the Auto-Crowbar has been resolved, the amplifier resumes its normal operation. Conventional current-limiting is *not* used as part of the protective circuitry, as it is in most amplifiers, because current limiting can seriously degrade sound and even damage loudspeakers.

**AUTO-BUFFER® SYSTEM:** Provides automatic sensing and control of low impedance (2+ ohms) operation. Enables

continuous *non-current-limited-output*, without switches or protection-circuit turn off, when driving paralleled speakers and/or low-impedance loads.

**FEATURES:** CALIBRATED 20-LED POWER OUTPUT METERS...INPUT LEVEL CONTROLS...TRUE CLIPPING INDICATORS Indicate actual onset of waveform distortion...POWER TURN-ON SURGE DELAY Eliminates loudspeaker turn-on "thump" 16-gauge triple-braced steel chassis...TEST DATA CERTIFICATE Individually serialized, signed by final inspector...Professional rack-mount front panel...optional hardwood side panels.

**SPECIFICATIONS:** CONTINUOUS POWER OUTPUT: 250 watts per channel @ 8 ohms, 20Hz-20kHz, 375 watts per channel @ 4 ohms, 20Hz-20kHz...DISTORTION: THD—0.05% at rated power, 20Hz-20kHz, IMD—less than 0.05%...FREQUENCY RESPONSE: 20Hz-20kHz,  $\pm 0.1$ dB... SIGNAL TO NOISE RATIO: Minus 110dB... SLEW RATE: 50 volts/microsecond... 19"Wx7"Hx13"D, 50 pounds.





# Pro-Control Pre-Amplifiers

The new **PRO-CONTROL** preamplifiers from Soundcraftsmen provide **C-MOS** digital-control electronic switching for noise-free and distortion-free recording and listening enjoyment. All signal routing is accomplished with Soundcraftsmen's new **MOS-TROL®** high-performance electronic circuitry. This method allows all Signal Paths to be optimized and located near the input and output pc-board mounted jacks, which measurably lowers noise and cross-talk. The integration of buffered inputs with **C-MOS** and proprietary circuitry completely eliminates the distortion and degradation caused by other presently available, but now outmoded, electronic switching techniques.

## Control Four

The **PRO-CONTROL FOUR** has the capability for handling up to **EIGHT** input sources: CD/DAT, Phono, Tuner, Tape 1, Tape 2, Vid/Aud 1, Vid/Aud 2 and Vid/Aud 3. The sources selected for Line Out or Tape Out (or both) are indicated by

sequentially selected LED illumination. Automatic muting insures elimination of noise and transients during source selection and all operational switching.

Totally **independent** Line and Tape sections allow for the ultimate in **Control-Center flexibility**—for example, a user can record a Phono source to any or all Tape and Vid/Aud outputs while at the same time be listening to the CD input. **EIGHT** outputs are available: Normal A & B Line Outputs, "**AUTO BRIDGE®**" circuitry that electronically inverts A & B Line Outputs for tripling the power by bridging, an independently amplified Headphone Output, and 5 Tape Outputs: Tape 1, Tape 2, Vid/Aud 1, 2, and 3. Two additional inputs and outputs—External Loops—are provided for processing of **either** Line or Tape signals, plus Switchable Sub-sonic Filters for both Line and Tape signals, as well as Bass and Treble Controls.

There is also a "**DIRECT MODE**" (**STRAIGHT LINE**) to bypass the External Loops, Sub-sonic Filter, and Tone Controls, creating the ultimate pure signal path, a true "**straight wire with gain!**" The "**DIRECT MODE**" selection eliminates all signal processing and unnecessary signal paths to allow for the utilization of the full capabilities of CD players.

Soundcraftsmen's **DISCRETE** Phono Pre-amps provide the ideal means for superb LP reproduction.

## Control Three

**PRO-CONTROL THREE:** Provides most of the versatility and quality as the **PRO-CONTROL FOUR**, but with only two tape monitors and one signal processor loop.

**FEATURES:** **AUTO-BRIDGE** circuit triples amplifier power...Illuminated volume control pointer...**Sub-Sonic** filter...**DIRECT** mode for straight-wire performance...Independent recording and listening circuits...Discrete phono preamps...Stereo headphone jack...Professional rack-mount front panel...Optional hardwood side panels.

**SPECIFICATIONS:** **FREQUENCY RESPONSE:** High Level—5Hz-100kHz,  $\pm 0.25$ dB. Phono Input—20Hz-20kHz,  $\pm 0.5$ dB...**THD:** Less than 0.005%...**IM DISTORTION:** Less than 0.005%...**SIGNAL TO NOISE RATIO:** Phono—97dB, High Level—116dB...**INPUT SENSITIVITY:** Phono—2.5 millivolts, High Level—125 millivolts...**MAXIMUM OUTPUT:** 10 volts...**TONE CONTROLS:** Bass—10dB @ 100Hz, Treble—10dB @ 10kHz...19"Wx3½"Hx10½"D...15 pounds.



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# DX Series Pre-Amplifiers

## DX4200

**DESCRIPTION:** The **DX4200** Preamp/Equalizer is the most versatile preamplifier available. It was designed for the most demanding audiophile who takes a "hands-on" approach to his or her music system. The preamp section includes specially-designed "overload-proof" inputs for the latest CD players, with their potential for unsurpassed wide dynamic range. The phono preamp utilizes fully-discrete circuitry instead of the more common IC "chips," eliminating coloration and making it exceptionally quiet. It accommodates most moving-coil cartridges and even permits adjustment in capacitance loading from 50 picofarads to 800 picofarads, in 50 picofarad steps, for exact matching of virtually any phono cartridge. Soundcraftsmen's exclusive AutoBridge® circuitry permits the user to start with one stereo amplifier, and then to add a matching amplifier at a later date, operating both amplifiers in "bridged mono mode," thereby **TRIPLING** per-channel power output with no loss in performance. Ideal for meeting the power demands of digital

audio. Only the finest available parts, are used in Soundcraftsmen preamps. Three-way tape dubbing and two external signal-processor loops add to the DX4200's versatility.

The equalizer section of the DX4200 is the finest high-fidelity graphic equalizer available today. Twenty years of designing and manufacturing equalizers have given us significant performance advantages over other manufacturers, with revolutionary technology like the **Differential/Comparator® 0.1dB True Unity Gain** circuitry, essential for reproduction of the new digital audio disc and wide-dynamic-range recordings without severe limitation of needed "headroom," and for ultra-low noise and distortion. Our Wire-Wound Coil Filter circuitry makes possible **15dB** boost or cut on each **individual** octave and an incredible Signal-to-Noise Ratio of **114dB!**

## DX4000

The **DX4000** is a straight-line version of the DX4200 incorporating most of the features of the DX4200. See the Features section and picture below.

**FEATURES:** **DX4200** Dual 10-Band  $\pm 15$ dB Equalizer...Dual discrete phono stages...Variable phone cartridge loading with input level adjustment...Moving Coil cartridge input...Auto/Bridge circuit...Sub-Sonic filter...CD player inputs...Three-way tape dubbing...Front panel tape inputs and outputs...Two Signal Processor Loops...Professional rack-mount front panel with optional hardwood side panels. **DX4000** is the same excluding equalizer, cartridge loading and moving coil input.

**SPECIFICATIONS:** **FREQUENCY RESPONSE:** Hi-level  $\pm 1/4$  dB, 5 Hz to 100 kHz. Phono— $\pm 1/2$  dB, 20Hz to 20kHz...**TOTAL HARMONIC DISTORTION:** .01% at 1 Volt...**IM DISTORTION:** Less than .01% at 1 Volt...**PHONO IMPEDANCE:** 47K or 100 Ohms (**DX4200**)...**PHONO SIGNAL-TO-NOISE:** 97 dB...**PHONO SENSITIVITY:** **DX4200** (ad. ustable)—.28 millivolts minimum, **DX4000**—2.8 millivolts...**HIGH LEVEL SENSITIVITY:** 90 millivolts...**MAXIMUM OUTPUT:** 10 volts...**PHYSICAL:** **DX4200**—19"Wx5 1/4"Hx11"D, 20 pounds, **DX4000**—19"Wx3 1/2"Hx11"D, 15 pounds.



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# Pre-Amplifier Exclusive Features

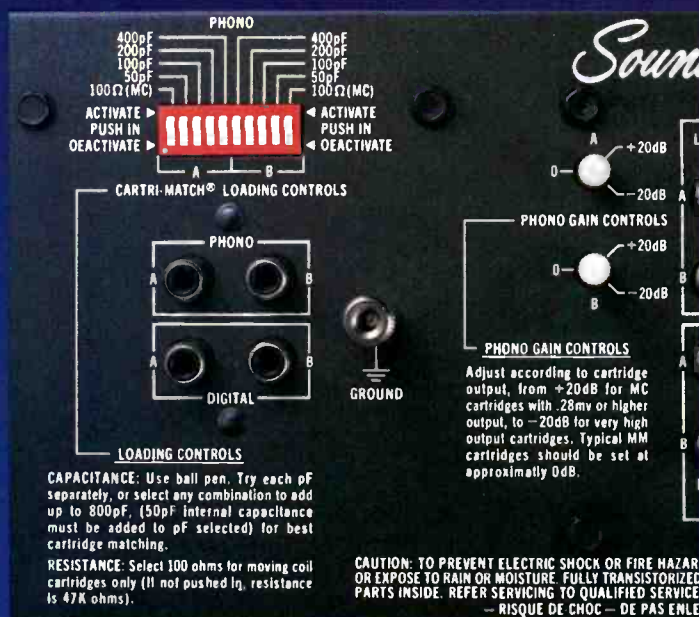
## SIGNAL PROCESSING



Four useful and individually costly components are combined in each Soundcraftsmen Preamp/Equalizer: a Ten-Band Stereo Equalizer, a superb Phono Preamplifier, a versatile Patch-Bay Switching Box and a stereo amplifier Bridging Adaptor. With the growing number of

excellent signal-processing devices available, it has become extremely difficult to connect these components to a stereo system and then be able to route any desired combination to loudspeakers and/or tape recorders. With Soundcraftsmen preamps it is as simple as pushing a

button! No more cable-switching; add-on devices are permanently connected to the patch-bay section of the preamp. For the serious tape recordist, this one feature can eliminate hours of frustration associated with the interconnecting of add-on specialty components.

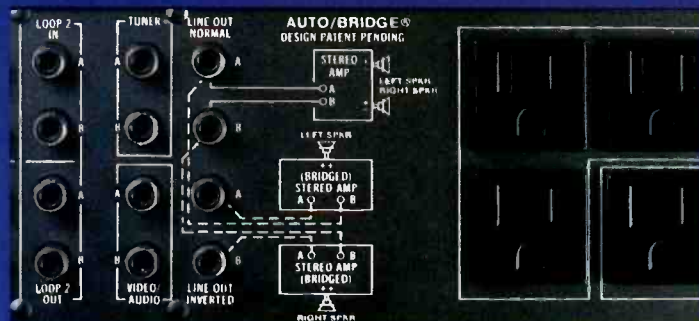


### CARTRI-MATCH®

Every magnetic phono cartridge is designed to operate optimally only when it "sees" the correct capacitance and impedance loads at the phono preamp. Improper loading results in degraded frequency response and inaccurate reproduction of recorded material. The Soundcraftsmen DX4200 Cartri-Match® permits proper loading of virtually any magnetic phono cartridge, in 50 picofarad increments up to 800 picofarads. We know of no other preamplifier which makes this crucial matching possible. Cartri-Match® also accommodates any moving-coil-type phono cartridge whose output level is at least .28 millivolts, and independent input level controls are included for precise balancing of left and right phono cartridge channels, and to match the phono level to the other program sources.

### AUTOBRIDGE®

The new Digital Audio Discs have, for the first time, the capability of recreating the dynamic range of a live musical performance. A stereo system's ability to reproduce this tremendous dynamic range ultimately depends upon one thing: the availability of adequate amplifier power. Even if one listens to music at an average listening level requiring only **one watt** of power, **over 300 watts** may be needed to reproduce dynamic "peaks" in the music! Soundcraftsmen has developed an active circuit called AutoBridge® to deal with this problem. AutoBridge® allows the normal connection of a stereo amplifier to a Soundcraftsmen DX-series preamp, with the option of adding a second, identical amplifier at a later date, and operating both stereo amplifiers in "bridged mono mode," one for each channel. Bridged operation **triples** the 8-ohm power per channel of Soundcraftsmen stereo amplifiers with absolutely **no** degradation of any aspect of performance. AutoBridge® assures non-obsolescence no matter how elaborate your music system becomes in the future.





# Pre-Amplifier Review

## Highlights

### Audio

The Pro-Control Four preamplifier is another example of Soundcraftsmen's superb engineering and dedication to user convenience and product flexibility. It serves as a true control center without adding complications for the user. The preamp employs an independent solid-state switching technique designed by Paul Rolfes, the company's chief engineer. This switching system lets you route any input to the line outputs while independently routing that signal, or any other, to the five tape-recorder outputs (two nominally for audio decks, three nominally for the audio tracks of video recorders). Front-panel

LEDs make it easy to keep track of system status: green LEDs show which inputs and processor loops have been selected for listening, and red ones tell you which have been selected for recording.

In addition to the multiple tape recorder loops, two more external signal-processor loops connect such components as equalizers, surround-sound processors, and ambience-recovery devices. These two loops can also be switched to function in either the "Listen" (line output) or the "Record" (tape output) mode. This flexibility allows you to conveniently and quickly apply an externally connected processor to the sig-

nal to which you are listening and another to the signal being recorded.

Subsonic filtering is available too, for either the listening or recording mode or for both at once. Conventional bass and treble controls are available in the listening mode only. For those who object to the presense of any signal-processing circuitry in a "pure audiophile-type" preamplifier, all such controls can be eliminated in the mode by touching a front-panel button labelled "Direct."

### Measurements

Frequency response for all of the high-level outputs was so flat

Continued on page 14.

## DX3000

Compact Disc Player and Stereo Video inputs make this new Preamp Control Center an outstanding addition to the Soundcraftsmen preamplifier and preamp/EQ models, at a new low price breakthrough.

In addition to the two tape monitors and tape dubbing capability, the DX3000 Straight Line Preamp features signal processing capability for insertion of any signal processor into the signal path.

Video/Audio inputs enable simple hook-up of a VCR or Video Disc Player's audio tracks to take full advantage of their extraordinary sound quality and the enhancement opportunities available when played through a fine component stereo system. Compact Disc inputs are especially matched to the high dynamic range capability of these players.

With bass and treble controls as well as a signal processing loop, the new Control Center is ideally adaptable to all

existing stereo component systems, as well as to the new Stereo VCRs and Video systems. The DX3000 features a Professional Rack-Mount front panel with optional hardwood side panels.

### SPECIFICATIONS

**FREQUENCY RESPONSE:** 5 Hz-60kHz +0db, -1dB...**THD & IMD:** Less than 0.01%...**TIM & NOISE:** -95dB...**PHONO S/N RATIO:** -85dB...**DIMENSIONS:** 19" w x 2 3/4" h x 10" d...**WEIGHT:** 10 pounds





# Signal Processors



## AE2000 ScanAlyzer

Soundcraftsmen's State-of-the-Art, AE2000 Auto-ScanAlyzer represents a landmark in professional quality analyzation/equalization equipment incorporated into one compact chassis. Both a Real-Time Spectrum Analyzer, utilizing Soundcraftsmen's revolutionary Differential-Comparator circuitry (Patent-Pending) with an astounding read-out accuracy of 0.1dB, AND an Octave Equalizer of unparalleled performance. The analyzer's automatic octave-scanning mode makes incredibly fast, accurate analyzation of room acoustics possible and the 100-LED full-frequency spectrum bargraph display constantly shows real-time frequency response. The precision-tuned passive, Wire-Wound Coil Filter circuits (no synthetic IC's) of the equalizer eliminate unwanted noise, hiss, and distortion common to inexpensive equalizers, while Soundcraftsmen's True Zero-Gain circuitry perfectly matches input and output voltages, crucial to the undistorted reproduction of the new wide-dynamic-range Compact Discs and Digital Tapes. The AE2000 is amazingly versatile and is designed to satisfy the most demanding audiophile and professional user alike. The AE2000 features a Professional Rack-Mount front panel with optional hardwood side panels. Electret condenser analyzing microphone included.

## —On Test—

INTERNATIONAL  
**MUSICIAN**  
AND RECORDING WORLD

...This unit is very versatile and therefore, very useful. It'll help set up an Eq curve for taping, compensating for monitors, recorders, tape, or all three. It can be used to check and troubleshoot individual components, check entire systems, analyze speakers and their crossover networks. With the addition of a parametric (it has an Aux Eq send and receive loop), it'll handle just about any stage feedback problem.

...Don't get me wrong. As always, spectrum analysis/equalizers are not the final word in eliminating acoustic problems by any means. For tough Eq problems (narrow band peaks and dips), you'll also need a parametric. Yet the Soundcraftsmen AE2000 solves the problems of RTA readout, noise source accuracy, and user inadequacies and can accurately analyse and Eq a room in a matter of minutes. With a price of \$699.00, this review is a rave.

Mike Shea

**SPECIFICATIONS AE2000: HARMONIC DISTORTION:** Less than .01% @ 2V...**IM DISTORTION:** Less than .01% @ 2V...**SIGNAL-TO-NOISE RATIO:** 114dB @ max. output...**OCTAVE CONTROLS:** ±22dB boost or cut—each octave (all other octaves set at maximum). ±15dB boost or cut—each octave (all other octaves set at "0")...**FILTER TYPE:** Precision-tuned passive wire-wound coil inductors...**DIFFERENTIAL/ COMPARATOR:** Measurement accuracy 0.1dB...**MIC PREAMP:** Input impedance 2K ohms, Gain: 80dB max., Frequency response: ±0.1dB 20Hz to 20kHz...**PINK NOISE SOURCE:** Internal generator...**SELECTABILITY:** Manual or Auto-Scanning with adjustable scan rate, Electronic switching of Display and Analyzer filters... 19"Wx5¼"Hx11¼"D...20 pounds.

**SPECIFICATIONS PRO-EQ 44: HARMONIC DISTORTION:** .01% @ 2V RMS...**IM DISTORTION:** .01% @ 2V RMS...**SIGNAL-TO-NOISE:** 114dB-10V RMS output, -100dB-2V RMS output...**INPUT CAPABILITY:** Maximum 10V RMS...**OUTPUT CAPABILITY:** 10V RMS...**INPUT IMPEDANCE:** 47K ohms...**OUTPUT IMPEDANCE:** 300 ohms...**BOOST/ CUT INDIVIDUAL CONTROLS:** ±22dB (all other controls at max): ±15dB (all other controls set at zero)...**UNITY GAIN TYPE:** CONTROLS: +12dB, -6dB... 19"Wx3½"Hx11"D...15 pounds.







# Equalizers

## Pro-EQ 44 Third-Octave

The Soundcraftsmen PRO-EQ 44 is a two-channel Graphic Equalizer designed especially for advanced applications in the field of music reproduction. Each of its channels is completely independent of the other and can be used as two monophonic equalizers for Studio or Pro applications. The channels are divided in  $\frac{1}{3}$ -Octave center frequencies from 40Hz through 1kHz. From 1kHz through 16kHz center frequencies are at  $\frac{2}{3}$ -Octave intervals. All center frequencies correspond with Standard ISO Center Frequencies. This  $\frac{1}{3}$ - $\frac{2}{3}$ -Octave arrangement provides maximum flexibility in the critical low and mid frequencies while permitting reductions in both size and cost in the less critical higher frequencies. Soundcraftsmen's exclusive 0.1 dB Differential Comparator Unity-Gain circuitry, combined with Dual Balancing LED's on the front panel, make balancing of input to output voltages fast and exceptionally accurate to within 0.1 dB, thus assuring maximum dynamic range, minimum noise and freedom from overload no matter what the desired EQ curve.

The PRO-EQ 44 features a Professional Rack-Mount front panel with optional hardwood side panels.

## DC2215 Equalizer

The Soundcraftsmen DC2215 is the finest high-fidelity graphic equalizer available today. Twenty years of designing and manufacturing have given us significant performance advantages over other manufacturers, with revolutionary technology like the Differential/Comparator® 0.1dB True Unity Gain circuitry, essential for reproduction of the new Digital Audio Tapes and Compact Discs without severe limitation of needed "head-room," and for ultra-low noise and distortion.

When both top and bottom Differential/Comparator® LED's have been balanced for equal intensity, there is "True Unity Gain" through the equalizer. Unity-Gain means that the equalized output voltage (or musical signal) is exactly the same as the unequalized input voltage. When True Unity Gain is established, the equalizer's full dynamic range is available for undistorted reproduction of wide-dynamic-range recordings. Our Wire-Wound Coil Filter circuitry makes possible 15dB boost or cut on each individual octave and an incredible Signal-to-Noise Ratio of 114dB! The DC2215 features separate tape monitor circuitry with tape and line equalization capability. Computone Charts are included for easy recording of various equalization curves. The DC2215 features a Professional rack-mount front panel with optional hardwood side panels.

## Pro-EQ 22 Equalizer

The PRO-EQ 22 sets new high standards in its price range with many of the features of the DC2215. The Soundcraftsmen Differential/Comparator® True Unity Gain controls with LED displays are identical to the DC2215, assuring full headroom for Digital Audio Tapes and Compact Discs, with minimum distortion and an outstanding Signal-to-Noise Ratio of 106dB. The PRO-EQ 22 features separate tape monitor circuitry and tape with tape and line equalization capability. Computone Charts are included for easy recording of various equalization curves. The PRO-EQ 22 features a Professional rack-mount front panel with optional hardwood side panels. 19"Wx3½"Hx11"D...15 pounds.

**SPECIFICATIONS DC2215:** INPUT MONITORING: Differential/Comparator® Circuit with LED's for 0.1dB accuracy...HARMONIC DISTORTION: Less than 0.1% at 2V...IM DISTORTION: Less than .01% at 2V... SIGNAL-TO-NOISE: 114dB at 10V output, 100dB at 2V output...OCTAVE CONTROLS: ±22dB boost or cut—each octave (all other octaves set at maximum), ±15dB boost or cut—each octave (all other octaves set at zero)...GAIN/CUT CAPABILITY: +32dB/-38dB—all controls maximum...UNITY GAIN CONTROLS: 13dB range...FILTER TYPE: Precision tuned passive wire-wound coil inductors...19"Wx5¼"Hx11¼"D... 21 pounds.





# Pre-Amplifier Review

Continued from page 11.

throughout the audio range that any response curve I might plot would simply be a straight line, no matter how much I expanded the vertical scale. There wasn't so much as 0.1dB of variation in amplitude from 20Hz to 20kHz. The -1.0dB points were reached at 5Hz and 165kHz. As for RIAA equalization, it was accurate to within 0.2dB at 100 Hz and within 0.4dB at 10kHz.

Harmonic distortion plus noise via the high-level inputs, for 0.5 V input and with the volume control set at maximum, measured 0.00045% at 1kHz, 0.005% at 20Hz, and 0.0047% at 20kHz.

Distortion decreased when the "Direct" or bypass mode was used. For example, with 0.5 V applied and the volume control set at maximum, high-level THD + N was only 0.0028% at 1kHz, and 0.0035% at 20Hz.

SMPTE-IM distortion measured 0.006% with 1 V input and the volume control adjusted for 2 V output. With 0.5 V in, IM increased slightly, to 0.009%, and with 2 V input, IM increased a bit further, to a still insignificant 0.011%.

Input sensitivity via the high-level inputs was 125 mV for 0.5 V output.

Soundcraftsmen chose to reference an output level of 2V, thereby coming up with a somewhat higher S/N figure than I did. Even so, my signal-to-noise reading for the high-level inputs was an outstanding 95db, A-weighted. I can't remember any other audio amplifier, preamplifier, or receiver that yielded such a high value for S/N. Since 0.5 V is approximately

12dB lower than 2.0 V, I would have come up with a figure of 107dB—actually 2 dB better than claimed—if I had conducted the test as Soundcraftsmen's engineers did.

## Use and Listening Test

Although all of the measurements I made of the Pro-Control Four were certainly beyond criticism, my full appreciation for this well-designed component came only when I began to use it and to listen to the different program sources through it. With the tone controls set to their flat positions (easily accomplished thanks to well-defined detents at the controls' midpoints of rotation), I could not honestly detect any difference in sound quality between the normal mode and the "Direct" mode. Perhaps listeners more critical than I will be able to hear some improvements when switching to the "Direct" mode; if they do, fine. For my ears, both settings yielded absolutely clean, uncolored sound that was no different from what I heard when the same high-level program sources were connected directly to the power amplifier. (This is a good test for any pre-amplifier, whose main purpose should be control rather than signal modification.)

My chief delight with the Pro-Control Four was its solid state switching logic. What a joy to be able to switch a program source to a tape-out jack without hearing any switching noise or click in the program I was listening to at the time.

As I think about it, Soundcraftsmen has exhibited audio wisdom

in all aspects of the Pro-Control Four's design. To Paul Rolfes and his crew, my sincere congratulations!

**Leonard Feldman**

## Stereo Review

I suspect that audiophiles who have accumulated a number of accessory devices over the years would be encouraged to re-install them if they had this control amplifier in their systems. I know I was! However you look at it, the Soundcraftsmen Pro-Control Four is a beautiful piece of equipment.

**Julian Hirsch**

## Stereo Review

The Soundcraftsmen Preamp/EQ is obviously a highly versatile control center whose performance and sound quality should satisfy the most critical listener. We obtained fine results using several different phono cartridges—including a high-output moving-coil unit. It should be noted that Soundcraftsmen recommends it only for use with moving-coil cartridges that deliver at least 0.28-mV output...

The greatest appeal of the Soundcraftsmen Preamp/EQ will probably be to people who have definite ideas about the octave-to-octave balance they want to hear from their music systems... a high-quality, very flexible control preamplifier with above-average tape-recording facilities make a fine combination, and the Soundcraftsmen is the proof.



# Pro-CD750

Soundcraftsmen's new Compact Disc player provides not only the superb sound reproduction to be expected from a high quality Compact Disc player, but also all of the most-wanted features. We have, in addition, engineered and designed it to conform to the extremely high standards required by Professional users and Commercial installers, where not only the finest quality musical performance, but also full-sized rugged construction with anti-resonant metal chassis and full-floating transport are of primary importance.

We have also designed this new Compact Disc player to be "user-friendly," with selectable and controllable functions that are designed for practical application and simplicity of operation. Our engineering department's development and design of our exclusive **Differential/Compander** circuitry, plus the enhancement provided by our **Spectral Gradient** circuitry, are perfectly suited and are specifically designed for optimum performance from virtually any type or quality of recorded materials. The CD750 features a Professional rack-mount front panel with optional hardwood side panels.

Our **Differential/Compander** is newly developed circuitry designed and made in the U.S.A. by Soundcraftsmen to provide the utmost flexibility for the Compact Disc format...high Dynamic Range for serious listening pleasure...or optional closely-focused dynamic range for casual listening, for recording cassettes for playback on limited-capability systems such as car stereos, portable stereos, etc....In fact, especially with Classical selections, you will find that the **Differential/Compander** is indispensable for background music.

The **Spectral Gradient** is extremely subtle in its operation. This variable circuit enhances the listenability of CD's with

hard or harsh high frequency characteristics, an unusual phenomenon that has been attributed to several different causes, such as imperfect mastering or deficiencies in recording acoustics. The **Spectral Gradient** circuit was designed specifically to soften that harshness without affecting the overall sonic reproduction of the musical passages and is by-passed when not needed.

**SPECIFICATIONS—CD750:** FREQUENCY RESPONSE: 5Hz–20kHz,  $\pm 1\text{dB}$ ...DYNAMIC RANGE: 95dB (IHF-A)...S/N RATIO: 99dB (IHF-A)...HARMONIC DISTORTION: 0.005%, 1kHz...SEPARATION: 86dB...WOW & FLUTTER: Not measurable...OUTPUT VOLTAGE: 2 volts...SAMPLING FREQUENCY: 88.2kHz...QUANTIZATION NUMBER: 16 bit linear...POWER CONSUMPTION: 12 watts...SIZE: 19" x 3½" x 12"...WEIGHT: 16 lbs.

## Pro-Tuner Four

The new Soundcraftsmen tuner's advanced technology incorporates sophisticated Frequency Synthesized Tuning with a highly stable Quartz Crystal Oscillator that locks onto the broadcast signal and makes station selections precise and drift-free. A Microcomputer Memory System, coupled with Automatic Scanning, provides incredibly simple pre-programming and station selection. Scan to the desired station, then simply push "Memory" and push any station recall button. Your favorite FM and AM stations can be easily pre-set through the Microcomputer System for 16-station

(8-AM, 8-FM) memory programming. Super AM Broad Band Selector expands the normal AM frequency range to provide a "super-broad" frequency response. Program Maintenance Circuitry to hold preset stations in memory. Automatic Scanning: Scans forward or reverse to stop at next usable station. "Scan Manual": Scans forward or reverse to next station frequency. In the Scan Manual mode the tuner will stop at even or odd megahertz to facilitate cable reception. Signal-strength liquid crystal metering indicators. "Stereo" indicator shows usable stereo station signal. "AM" and "FM" mode LED indicators. "Mono" mode selector. "Auto Mute" for inter-station noise-free tuning. 5-digit read-out in 50kHz steps, for possible future U.S. station spacing requirements and worldwide operations. Phase-Locked Loop automatic optimum-tuning circuitry. Digital Quartz PLL Synthesizer circuitry. Deemphasis convertible from 75 to 50 micro seconds for worldwide use. 300 ohm/75 ohm antenna connectors. Professional rack-mount front panel...optional hardwood side panels.

### SPECIFICATIONS PRO-TUNER FOUR: FM SECTION:

FM SENSITIVITY: 9.8dBf usable 1.7 microvolt IHF...QUIETING: 36dBf for 50dB stereo. 12dBf for 50dB mono... SIGNAL TO NOISE: 75dB stereo (IHF)...THD: 0.08%...IF REJECTION: 90dB...IMAGE REJECTION: 86dB... CAPTURE RATIO: 1.0dB...STEREO SEPARATION: 50dB...FREQUENCY RESPONSE:  $+0.5\text{dB}$ ,  $-1.5\text{dB}$ , 25Hz–15kHz.

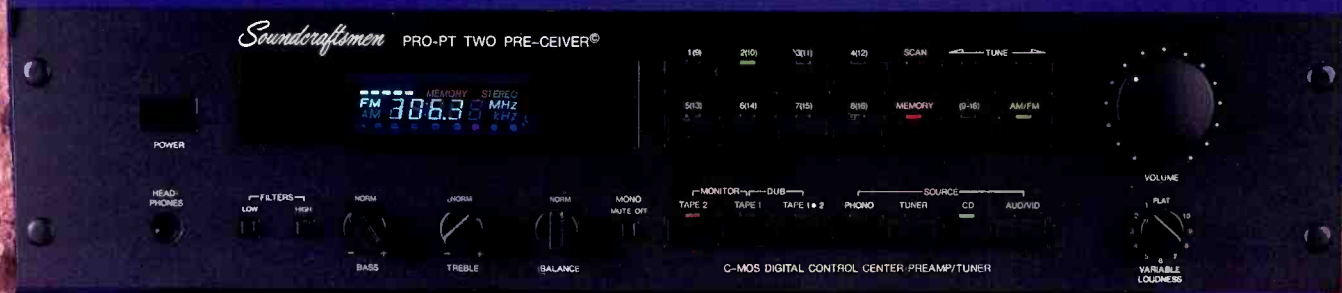
### AM SECTION:

USABLE SENSITIVITY: 25 microvolts... SELECTIVITY: 40dB...ANTENNA: Adjustable ferrite loop... 19"Wx2¼"Hx12"D...10 pounds.





# 16 Introducing our new Pre-ceiver<sup>®</sup>... ...the Pro-PT TWO Preamplifier/Tuner



Soundcraftsmen, America's leader in separate components, introduces the new PRO-PT TWO PRE-CEIVER. This new Control-Center/Preamplifier/Tuner combines the outstanding performance and features of our separate tuner and preamplifiers. The PRE-CEIVER offers the sensible alternative to the "all-in-one" receiver, by allowing the freedom to choose a separate power amplifier to match the needs of the speaker systems. This intelligent PRECEIVER approach allows you to avoid the inherent problems and compromises found in today's receivers, and still enjoy the cost-saving of combining the compatible preamplifier and tuner stages on a single chassis.

## C-MOS PREAMP SECTION

The PRO-PT TWO's preamplifier section has the quality and features you need as the cornerstone of your audio system. Feather-Touch Digital C-MOS Switching for noise-free and distortion-free listening and recording. Source selections include CD/DAT, Phono, Tuner (built-in), Audio/Video, plus two Tape Monitors with dubbing. Each source has its own push-button and LED for easy selection and verification of signal source desired.

Two pairs of outputs for Surround Sound applications or Subwoofer/Satellite speaker systems. Two switched plus one un-switched AC outlets are provided for powering other audio components. Our unique Variable Contour Loudness Control allows precise and easy selection of frequency balance at any volume level.

## PREAMPLIFIER SPECIFICATIONS

TOTAL HARMONIC DISTORTION: 0.008%  
IM DISTORTION: 0.008%  
FREQ. RESPONSE: 20Hz-100kHz  $\pm 0.5$ dB  
MAXIMUM OUTPUT LEVEL: 8 volts  
SIGNAL-TO-NOISE RATIO: Phono: 80 dB  
High Level: 100 dB  
INPUT SENSITIVITY for .5 volt output: Phono: 2.5mV  
TONE CONTROLS: High Level: 200mV  
Bass:  $\pm 10$ dB @ 85Hz  
Treble:  $\pm 10$ dB @ 12kHz  
DIMENSIONS: 19" x 3 3/4" x 11 1/4" WEIGHT: 14 pounds

Due to space and technical design limitations, ordinary receivers cannot be equipped with the high-current, high-voltage power stages found in even modestly-priced separate power amplifiers. In a receiver, these heavy-duty power stages, necessary for high dynamic range amplification, would generate levels of heat, hum, and noise unacceptable to the tuner and preamplifier's low level, sensitive circuits. The new PRE-CEIVER eliminates all of these compromises by keeping the low-level preamplifier and tuner stages completely separate from the incompatible high-level power amplifier stages; thus providing a near-perfect and distortion-free output signal to drive any amplifier.

## DIGITAL PLL TUNER SECTION

The PRO-PT TWO Tuner section's advanced technology incorporates a digitally synthesized, quartz-referenced crystal oscillator which guarantees unparalleled tuning accuracy and drift-free reception. Multipath distortion, common in urban areas where many strong stations exist, has been virtually eliminated by a specially designed RF stage. In rural areas, where low signal levels are common, the PRE-CEIVER'S high sensitivity assures you of distortion-free and noise-free reception. A Micro-Computer memory system, coupled with Automatic Scanning allows extremely simple programming of 32 stations of your choice (16 FM and 16 AM). Direct access retrieval of any of your preprogrammed stations is as simple as pressing one or two buttons. The Scan Selector provides you with easy access to strong stations or direct access to even the weakest of stations. The Mono/Mute-Off selector allows noise-free listening of very weak stereo broadcasts.

## TUNER SPECIFICATIONS

IHF SENSITIVITY: 10.3dBf  
SIGNAL STRENGTH for 50dB quieting:  
Mono: 12.5dBf  
Stereo: 36 dBf  
CAPTURE RATIO: 1.2dB  
ALTERNATE CHANNEL SELECTIVITY: 80dB  
SEPARATION @ 1kHz: 52dB  
THD @ 1kHz: Mono—.04%, Stereo—.08%  
S/N RATIO: Mono—85dB, Stereo—75dB



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## Krell Digital CD Player

Perhaps the most noticeable feature of the Model MD-1 is the top-loading turntable design, which is said to eliminate problems associated with drawer-loading mechanisms and bearings. An electronic sensor confirms when a disc is on the turntable. The transport uses a design based on the Philips single-beam CDM-3 swing-arm motor drive mechanism. The machine's electronics section uses toroidal transformers and two-stage regulation to limit self-noise to the lowest levels possible. Suspension components are machined from solid aluminum and are mounted to a solid aluminum base plate. The transport is mounted in acrylic plastic, which, the maker says, keeps extraneous resonances from reaching the assembly. Additionally, four suspension towers isolate the system from unwanted noise or vibrations in the area where the MD-1 is situated. Price: \$4,000. For literature, circle No. 100



## M & K Subwoofer

Television signals often contain surprising bass, while TV-set speakers surprise you if they have any bass at all. The MX-1000 powered subwoofer is therefore built into a pedestal with a top 28 inches wide, designed to hold a large-screen



TV set (the one pictured is a 26-inch model), and shielded so as not to affect the on-screen picture. A built-in amplifier, rated at 400 watts peak, drives a pair of horizontally opposed 12-inch woofers; response is rated at 20 to 125 Hz,  $\pm 3$  dB. Price: \$1,495. For literature, circle No. 101



## Sparkomatic Car CD/Receiver

The Model SR600 incorporates a CD player, FM/AM tuner, and external amplifier at a low price. Features of the CD section include scanning of the first 10 S of each track, a "standby" memory which allows disc play to be interrupted for radio listening and then resumed from the same spot, and 20-track random programming. The tuner section has memories for 12 FM and six AM stations, and station scan. The stereo amplifier delivers 25 watts per channel at 10% THD, and line-out jacks are provided for an external amplifier to feed the rear or additional speakers. Price: \$399.

For literature, circle No. 102



## Hitachi CD Changer

With dual six-disc magazines, the DA-C70 not only holds 12 CDs but allows the owner to change one magazine while the other plays, to ensure

continuous music. All 12 discs can be played in order, and up to 32 selections can be preprogrammed. Dual oversampling is used. Also featured are a 41-key remote control, and a built-in, programmable, on/off clock timer. Price: \$499, including remote. For literature, circle No. 103



# MARTIN-LOGAN LTD.

## AUTHORIZED DEALERS—1989

**AL** Huntsville, Campbell Audio Video

**AZ** Phoenix, Sound Advice, Inc.; **Tucson**, Wilson Audio, Ltd.

**CA** Canoga Park, Upscale Audio; **Concord**, C&M's Stereo Unlimited; **Encinitas**, Stereo Vision; **Fairfield**, C&M Stereo Unlimited;

**Huntington Beach**, Havens & Hardesty Audio;

**La Jolla**, Stereo Vision; **Los Angeles**,

Christopher Hansen Ltd.; **Orange**, Absolute

Audio; **Pasadena**, GNP Audio Video;

**Sacramento**, Keith Yates Audio; **San Diego**,

Stereo Design; **San Francisco**, \*Audio

Excellence; **San Luis Obispo**, Audio Ecstasy

**CO** Denver, Soundings

**CT** New Haven, Take 5 Audio

**FL** Ft. Lauderdale, Audio Center, Inc.;

**Melbourne**, Sound Gallery; **Tampa**, Audio Visions

**GA** Atlanta, Stereo & Video Designs; **Smyrna**, The Stereo Shop

**ID** Boise, The Stereo Shoppe

**IL** Champaign, Champagne Audio; **Evanston**,

Audio Consultants; **Hinsdale**, Audio

Consultants; **Libertyville**, Audio Consultants

**IN** Indianapolis, Ovation Audio

**KS** Lawrence, Kief's Gramophone Shop

**KY** Lexington, Ovation Audio

**LA** Metairie, Audio Resource

**MA** Wellesley, The Music Box

**MO** Ellicott City, Gramophone, Ltd.;

**Lutherville**, Gramophone, Ltd.

**MI** Birmingham, Almas Hi-Fi Stereo; **Dearborn**,

Almas Hi-Fi Stereo; **Farmington Hills**, Almas

Hi-Fi Stereo; **Grand Rapids**, Classic Stereo,

Ltd.; **Kalamazoo**, Classic Stereo, Ltd.;

**Rochester**, Almas Hi-Fi Stereo

**MN** Minneapolis, Audio Perfection

**NC** Charlotte, Stereo Showcase; **Durham**, Audio Visions

**NH** Nashua, Audio By A.J. Conti

**NJ** Englewood, Stuart's Audio Video;

**Lawrenceville**, Hal's Stereo & Video;

**Westfield**, Stuart's Audio Video

**NM** Santa Fe, The Candyman

**NY** Albany, Altair Audio; **Brooklyn Heights**,

Innovative Audio; **Goshen**, Longplayer Stereo

Center; **New York**, Sound By Singer;

**Scarsdale**, \*The Listening Room; **West**

**Babylon**, Audio Visions

**OH** Cincinnati, Audible Elegance; **Dublin**,

Audio Encounters; **Warrensville Hts.**, Hoffman's Stereo

**OR** Portland, Corner Audio

**PA** Berwyn, Soundex Electronics; **Pittsburgh**,

Better Sound Concepts; **Selinsgrove**, The

Stereo Shoppe; **Willowgrove**, Soundex

Electronics

**TN** Memphis, Underground Sound; **Nashville**, Cumberland Audio

**TX** Amarillo, Sound Systems Ltd.; **Austin**,

Audio Systems; **Houston**, The Esoteric Ear

**UT** Salt Lake City, Audition Audio

**VA** Alexandria, Excelibur Audio; **Newport**

**News**, Sound Approach; **Richmond**, Audio Art

**WA** Tacoma, Advanced Audio Systems

\*Statement System Dealer

the electrostatic loudspeaker technology company

# AUDIOCLINIC

JOSEPH GIOVANELLI

## Four Outputs from Two Inputs

*Q. My tape deck has two line inputs and two line outputs. I also have a piece of equipment with a couple of sets of inputs and four output channels. The instructions say two of these outputs are for surround sound. If all I have are two audio channels going in, how can I have four output channels? How can I get quadraphonic sound from my tape deck?—David Hicks, Rogers, Ark.*

A. Yes, it is possible to obtain four channels of audio from just two channels. It is accomplished by a mathematical trick known as "matrixing." The phase of each channel is examined and the difference in phase is used to separate the signal into four channels.

Even some tapes which were not purposely encoded to take advantage of surround-sound decoders may still yield interesting sonic results. Along the same line, note that surround-encoded tapes can be copied using ordinary equipment. When the copy is played using the appropriate decoder, the four audio channels will be present in the loudspeakers.

## Intermittent Amplifier Output

*Q. I lose output from the left or right channels of my receiver, a condition that does not "play favorites" with either channel. I have taken the unit to two reputable stereo repair shops, only to be told nothing is wrong. However, the last time the repairman connected it to his speakers, the problem occurred. He put it on the bench and gave it a good going over. When I got the equipment home, the problem had temporarily disappeared. Three months later, it returned.*

It does not matter whether I play the tuner, cassettes, or CDs. If the right channel quits, I've found that turning the balance control completely to the right and increasing the volume to dangerous levels will bring the volume previously a whisper, to loud but proper levels. I can then turn down the volume and have the system work normally. If the left channel drops out, I can do the same with the balance control—moving it to the left, of course. Can you help?—Name withheld

A. As with so many questions of this kind, there can be a number of causes for your equipment's erratic behavior.

My first thought—and I'm not at all convinced it's the right one—is that you are driving your receiver so hard that the protection circuits are invoked. The problem here is that they would still not permit normal operation when you advance the volume as high as you described.

It is certainly possible that there are dirty contacts on the various switches, including the program, mode, and speaker selectors as well as the volume and balance controls. Considering the "cure" you use, it is likely the problem is downstream from the volume and balance controls.

Another possible source of trouble is poorly soldered connections, especially in circuits which follow the volume and balance circuits. I have also had problems with defective capacitors, which I "cured" with a method similar to the one you described.

Because the problem occurs in both channels, I tend toward the idea of dirty switches: There must be something in common with both channels, and a switch is certainly something in common. Further, each set of contacts on such a switch is equally subject to oxidation.

## Hum in a Tube Preamp, Part I

*Q. I have an old tube preamplifier which I built from a kit. It served me well, but now it has developed an annoying, intermittent hum. About a year ago, I started to hear hum in the left channel—but on an intermittent and unpredictable basis. I am not sure if this hum is 120 Hz or perhaps some other low frequency. I can always squelch the hum by turning the preamp's power off and then back on, but the hum starts again after awhile. This condition only occurs when I play phonograph records. What can I do to eliminate the problem?—Gerald S. Fox, Bethpage, N.Y.*

A. In most instances of this sort, the hum you describe can be attributed to aging electrolytic capacitors. I suggest that you change all of the plate decoupling capacitors as well as the filter

If you have a problem or question about audio, write to Mr. Joseph Giovanelli at AUDIO Magazine, 1515 Broadway, New York, N.Y. 10036. All letters are answered. Please enclose a stamped, self-addressed envelope.

capacitors. If you want to really do a complete job, change the cathode bypass capacitors as well. I doubt that changing these latter caps will solve the hum problem, but they may result in improved bass response.

Although I have suggested that you change all electrolytic capacitors, it is reasonable to assume that those associated with the phonograph stage are responsible for the hum. If the frequency of the hum is 120 Hz, it is the result of ripple from the power supply affecting the phono stage. Alternatively, ripple in the filament supply could find its way into high-gain grid circuits. If the hum is produced at some frequency other than 120 or perhaps 60 Hz, then it is the result of positive feedback between stages, and it's the purpose of the decoupling capacitors to prevent this.

#### Hum in a Tube Preamp, Part II

*Q. Thank you for replying to my letter about my old but good preamplifier. Your guess that the hum is the result of aging electrolytic capacitors was a good one, but I don't think it is correct in this case. I have examined the schematic and the circuit itself and find no capacitors which are common to just the left channel—the channel on which the hum appears. I realize that the "can-type" units have many sections, but none of the individual sections serve this left channel.—Gerald S. Fox, Bethpage, N.Y.*

*A. Well, that's what happens when I have to guess about a problem because I don't have a schematic to go on. I figured that each capacitor would serve only a single stage.*

Still, my guess could be right. It is possible that there is a leaky heater/cathode in the triode section representing the left channel of the phono circuit. If so, it would affect just that channel. If there is an intermittent in the filament power-supply capacitor, it would mean that when the value of that capacitor drops, ripple would be present in the filaments. Because of the leak to cathode, the ripple could be passed along to the rest of the circuit via the feedback loop associated with that cathode.

Even where a decoupling capacitor serves both channels, it is still possible for hum to be heard from just one. This

can be accounted for because of ground layout problems, because "ground" is not always true; there will be some d.c. resistance. If hum appears across this resistance, a voltage will also appear across it in accordance with the frequency and amplitude of the hum.

It is also possible that the hum could be the result of problems with your tonearm wiring, including connections to the cartridge, connections from the inside tonearm wiring to the "outside world," and the skirt of the phono connector not being as tight as it actually should be.



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**A**RIA. SUMO proudly introduces a revolutionary new planar loudspeaker, Aria, which after years of development promises to change our conception of reproduced music.

Aria provides a remarkably coherent, almost tactile, soundstage. A presentation so natural, so believable that we are left without adjectives – or words. Only the experience of having heard what is truly one of the most important loudspeakers to be offered in decades.

Like ripples spreading in a pond, sound emerges in nature to reach our ears with an integrity that is clearly different from reproduced sound. This is particularly true of musical instruments; whether plucked, struck, or blown.

Aria recreates sound in much the manner it occurs naturally. Like many other planar loudspeakers, Aria's radiating surface is a thin polyester membrane. There are no cone drivers. However, unlike other designs – whether conventional or planar – Aria does not attempt to move air as a piston. Instead, drive is precisely applied to a small area at the center of the diaphragm, elegantly approximating a point source. A series of controlled traveling waves then spread passively from the middle of the diaphragm, producing a spherical waveform – the virtual ideal. Energy is distributed with remarkable uniformity across the audible band. Treble dispersion is excellent. And with a single element generating sound, there is an incredibly coherent sonic picture.

Aria reproduces sound the way it occurs in nature. Much the same way that a pebble thrown into a still pond spreads waves across the water's surface. As a single element full range loudspeaker, its design is also a clear departure from approaches that have gone before. There are no crossovers. There are no delay lines. There is no response shading; nor are there associated electronics, either active or passive. Aria breaks new ground to such an extent that patents have been applied for and are pending worldwide.

Designed and manufactured exclusively for SUMO by Highwood Audio in Canada, Aria will be available at only a few very select dealer locations. Among those dealers displaying Aria are:

PRO AUDIO CONSULTANTS  
57 East Main Street  
Chester, NJ 07930  
201 879-8373

MYER-EMCO  
3511 Carlin Springs Road  
Bailey's Crossroads, VA 22041  
703 379-8800

# THE NATURE OF BALANCE.



SUMO PRODUCTS GROUP, 21300 Superior St., Chatsworth, CA 91311 818/407-2427  
SUMO CORP CANADA, 1305 Odium Dr., Vancouver, B.C. V5L 3M1 604/254-5148





**A**NDROMEDA II. With a staggering 200 amperes of peak available current, Andromeda II is SUMO's newest and most powerful amplifier. It is the culmination of over a decade of work done on amplifier design and sits at the end of an impressive path that includes such products as Ampzilla, the GAS 500, the SUMO Half Power, and Andromeda. Andromeda II is the latest expression of a consistent attitude about music reproduction.

Andromeda II is also the beneficiary of a purist design philosophy. Characterized by symmetry and balance, this philosophy is evidenced by the exclusive use of discrete push-pull circuitry throughout. Andromeda II is also fully balanced, input to output. Signals are actively amplified from both sides of the amplifier, positive and negative – as opposed to normal practice where one side is referenced to ground. Since both sides of the loudspeaker are then driven symmetrically by matched, but separate sources, greater control over piston (or diaphragm) motion is achieved. The result is more precise imaging, a better, more stable soundstage, and enhanced spatiality.

Balanced amplifiers also offer high common mode rejection and lower attendant noise. Much has been written lately about the superiority of this approach; and recently a number of other high end companies have joined SUMO in the manufacture and marketing of balanced designs – at an average retail price of over \$5,000!

Andromeda II benefits from the most recent advances in semiconductor technology. Its output stage, for example, utilizes 16 individually measured and matched mosfets in a symmetrical push-pull arrangement. These devices, only recently introduced, are stunningly fast and stable. Their performance is further enhanced by a proprietary output linearizing circuit that reduces crossover notch distortion to levels more typical of Class A amplifiers. As a result, air is reproduced around acoustic instruments with a naturalness that must be heard to be appreciated. Massed strings are warm and vibrant; and their overtones luminous – all without a hint of hardness or strain.

Andromeda II is also a low negative feedback amplifier. Its rated power is 200 Watts per channel into 8 Ohms. And there is no protection circuitry or intrusive current limiting to constrict sound quality. All told, Andromeda II is a remarkably natural and faithful reproducer of music, and an amplifier that should be considered for any application where smoothness and power are the prime requisites. As with all SUMO electronics, Andromeda II is designed and manufactured in the United States.

Among those select dealers stocking our products are:

UNITED AUDIO CENTERS  
900 North Michigan Avenue  
Chicago, IL 60611  
312 664-3100

SOUND ADVICE  
2275 Palm Beach Lakes Blvd.  
West Palm Beach, FL 33409  
407 471-2777

# SYMMETRY AND BALANCE

The logo for SUMO, consisting of the letters S, U, M, O in a stylized, outlined, blocky font.

SUMO PRODUCTS GROUP, 21300 Superior St., Chatsworth, CA 91311 818/407-2427  
SUMO CORP. CANADA, 1305 Odium Dr., Vancouver, B.C. V5L 3M1 604/254-5148



THE NEW BALANCE

1000 WATT

1000 WATT

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**A**THENA. The preamplifier is in many ways the most telling component in the audio chain. All too often technical absolutism results in sound quality that is sterile, unappealing, or aggressive. Yet bad lab performance almost always indicates poor sonic integrity. With Athena, Sumo demonstrates a new balance. A preamplifier that is both a stunning performer in the areas of quickness, linearity, and freedom from overload. Yet a warm, faithful, and exciting reproducer of music.

Athena represents the culmination of a major effort at Sumo. As such, it sets new standards for dynamic headroom and freedom from overload. Utilizing high voltage power supply rails, passively linearized circuitry, and a high current toroidal transformer, Athena can faithfully reproduce music at levels far in excess of the peak output of signal sources. As a result, compact discs display dynamic range without high end pain. And complex passages come through intact and unstrained.

Sonic purity in Athena is enhanced both by careful component selection and the exclusive use of pure Class A circuitry. Low noise 1% metal film resistors and metalized polypropylene capacitors are used throughout. Components are mounted on a military grade glass epoxy printed circuit board. And all external connections are made via gold plated input and output jacks. Further, a bypass function allows the user to totally remove the high level section of the preamp from the signal path. When selected, this provides both direct line-drive for high level sources (such as a CD player), as well as direct phono out.

At various times and for various products, we hear the words powerful, impactful, detailed, delicate, accurate, transparent, smooth, natural and a variety of other flattering adjectives. But one word is repeated more frequently than all the rest, and it is that for which we have strived above all. Musical. Athena is above all gloriously musical.

As with all Sumo products, Athena is designed and manufactured in the United States. Among those select dealers stocking our products are:

HOME ENTERTAINMENT  
939 Bellevue Way NE  
Bellevue, WA 98004  
206 453-2837

ROGERSOUND LABS  
15251 Beach Blvd.  
Westminster, CA 92683  
714 893-7558

# THE NEW BALANCE.



SUMO PRODUCTS GROUP, 21300 Superior St., Chatsworth, CA 91311 818/407-2427  
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Sumo

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2  
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INPUT

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VOLUME - BALANCE

athens

STEREO  
MONO  
LF  
FILTER  
NORMAL  
BYPASS





## Carver CD Player

The TL-3300 uses 18-bit digital electronics with eight-times oversampling and dual D/A converters. It also features a "Digital Time Lens" circuit, designed to restore ambience and frequency balance, which are

sometimes altered when analog recordings are remastered for CD. Random programming of 22 selections is available from the front panel or the remote control. Price: \$699, including remote. For literature, circle No. 104



## Sherwood Cassette Deck

Economically priced, the DD-1030 nonetheless offers high-speed and synchronized

dubbing and Dolby B NR. In addition, its dual wells allow sequential play of two tapes. Frequency response is 30 Hz to 16 kHz. S/N, with Dolby B NR, is 65 dB. Price: \$159. For literature, circle No. 105



## Portland Instrument CD Carrier

Compact Disc jewel boxes are awkward to carry around and open, yet portables and in-dash car CD players give us reasons to carry CDs. The CD/Mate 10 Pack holds 10 discs in individual pockets lined with soft, anti-static cloth.

## Sony Headphones

The MDR-CD999 headphones feature a closed-ear oval ear pad to block sound, and a large, soft head cushion. The transducers use 50-mm amorphous, diamond-evaporated diaphragms supported by a ceramic composite panel. The concealed, one-sided cord is of linear-crystal, oxygen-free copper Litz wire, and has a gold-plated plug. Frequency response is rated at 3 Hz to 30 kHz. Price: \$250. For literature, circle No. 106



Self-adhesive hook-and-loop fasteners are provided, for attaching the CD/Mate to a portable player (as shown) or to a convenient spot in the car. Price: \$16.95. For literature, circle No. 107

# SATELLITES & POWERED SUBWOOFERS

Throughout the audio world, M&K Sound is synonymous with high performance Satellite and Powered Subwoofer speaker systems. And while other manufacturers are discovering the substantial advantages of this concept, we are applying fifteen-plus years of loudspeaker design and audiophile recording experience to create a new, fifth generation of innovative products.

Think of these as *component* speakers — speakers with the flexibility to adapt to *any* listening environment, especially that of the multi-channel Surround Sound system. Although compact in size, M&K Satellites actually outperform large conventional speakers — and M&K Powered Subwoofers give you the universally recognized superiority of a separate subwoofer for the ultimate in bass performance.

With mid and high frequency drivers mounted in optimally shaped enclosures, M&K Satellites deliver sharp detail and clarity with pinpoint imaging — going far beyond the “boxy” and “canned” sound of conventional speakers. Our precise driver alignment and unique crossover design insure that sounds reproduced by both drivers reach you simultaneously — giving M&K Satellites the rare ability to produce the sharp transients and presence of live musical instruments. *Close your eyes and the speakers seem to disappear — the sound is live!*

M&K's component speaker concept perfectly meets the sonic and aesthetic needs of the '90s. And our newest innovations are advancing audio/video system performance with pedestal subwoofers, high-performance center channel and other speakers optimized for Dolby Surround Sound.

No other company has over fifteen years of experience in the design and manufacture of Satellites and Subwoofers. This experience, combined with the audio industry's only six Satellite, eight Subwoofer line makes M&K “the only choice.”

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# DEEP BASS

# MX-2000



MILLER & KREISEL  
SOUND CORPORATION

**MX-2000 Push-Pull  
Dual Driver  
Powered Subwoofer**

#### **The Ideal Subwoofer:**

It would be a speaker that lets you experience the richness, variety, and power of *real* deep bass — from the faint vibration of a gently bowed string bass to the thunderous impact of hard rock.

Technically speaking, it would be capable of high sound power levels all the way down to 20 Hz. High levels at low frequencies are necessary because the human ear has less sensitivity in the low bass portion of the sound spectrum than it does in the midrange portion — and this difference becomes progressively greater the lower the midrange sound power levels get.

Its response curve would avoid irregularities that produce coloration, and its distortion would be quite low to assure a *real* sound in musical instruments. And last but not least, it would have rapid response and

low overhang to avoid a 'muddy' sound.

Unfortunately, most subwoofers fail to meet one or more of the above criteria. Some provide fine detail but often lack the high output necessary at lower frequencies. Others provide high output, but concentrate it in a narrow range of the sound spectrum to produce that all too familiar and irritating "Boom-Box" sound.

Neither of these approaches is destined for greatness. For a subwoofer to be worth the attention of a discerning ear it must be able to render fine detail and provide high power — the attributes of the MX-2000.

#### **The MX-2000**

Bringing together great clarity; tremendous low frequency power and impact; plus the ability to seamlessly blend with any speaker, the MX-2000 establishes a new benchmark

# MX-2000

## MX-2000 Push-Pull Dual Driver Powered Subwoofer

for subwoofer excellence.

Housed in the MX-2000's cabinet is M&K's most powerful amplifier and two proprietary high-performance drivers — mounted in M&K's Push-Pull Dual Driver configuration. These elements perform in harmony to deliver outstanding performance under both steady-state and dynamic music conditions.

Furthermore, driven by a 300 watt continuous RMS bridged power amplifier with a high-current power supply, the MX-2000 allows you to experience high output and wide dynamic range.

### The Horizontal Push-Pull Dual Driver System

One of the key elements enabling the MX-2000 to achieve its high level of performance is the Horizontal Push-Pull Dual Driver System. This side-mounted, side firing, dual driver configuration lowers harmonic distortion, reduces cabinet coloration, and couples very effectively to the listening room in virtually any location.

### The Physical Setup

Two side-firing 12-inch drivers are used in the MX-2000 — one on the left and one on the right side of the cabinet. The driver on the left side is mounted conventionally, revealing the front of its speaker cone with the grill cloth removed. The driver on the right side, however, is *inverted*, i.e., faces inward, revealing the back side of its speaker cone along with its magnet and frame. Although mounted opposite each other in the cabinet, both drivers "point" in the same direction (see diagram), and both share the same internal cabinet air space.

### The Push-Pull Concept

In the MX-2000, when the left driver's cone moves out, pushing air away from the left side of the cabinet, the *back* of the *right* inverted driver's cone also moves out, simultaneously pushing air away from the right side of the cabinet. In the next (inward) half-cycle, both drivers' cones move in. The cones always move either towards each other or away from each other, and because they are mounted on opposite sides of the cabinet, the resulting output is a nearly spherical pressure wavefront emanating from the cabinet.

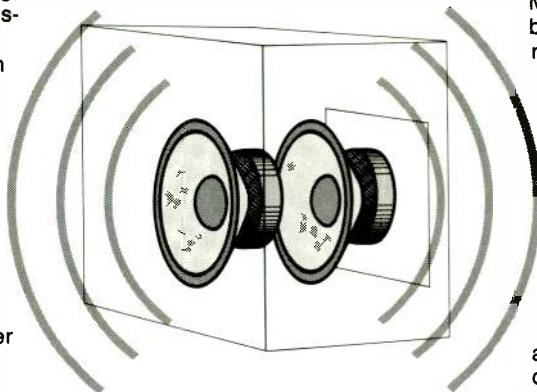
What substantially cancels the even-order harmonic distortion produced by the twin drivers is the fact that the left driver's cone is always located in the exact opposite

position, relative to its own magnet and internal structure, as is the right inverted driver's cone.

### Pulsating Sphere Sound Propagation

The powerful pressure wavefronts generated by the Horizontal Dual Driver configuration radiate deep bass into the room much like a pulsating sphere.

# BASS



Plus, the Dual Driver system in the MX-2000 practically doubles its efficiency — giving you even greater output and dynamic range than you would get from a single 12-inch subwoofer with a 300 watt amplifier.

### Dynamic Balance

A common obstacle to clean sound reproduction in high-performance speakers is sound coloration caused by the cabinet itself. The MX-2000 addresses part of this problem with the Horizontal Push-Pull Dual Driver system — which *dynamically balances* some of the tremendous forces generated by the speaker drivers. This technique reduces vibrational energy imparted to the cabinet as a whole, thereby contributing to the MX-2000's ability to reproduce sound with clarity and detail. Additionally, vibration of individual panels is minimized by substantial internal bracing.

### The M-2 Speaker Driver

The MX-2000 incorporates the new, M&K designed, M-2 driver. The M-2's large voice coil and magnet assembly give it an extremely high power handling capability, plus the ability to start and stop very rapidly in response to a musical signal. The M-2 is the tightest, cleanest, and most powerful driver M&K has ever offered!

By using two of these drivers, the MX-2000 achieves superior transient capabilities, and gets more radiating area than it would with a single 15-inch driver.

### 300 Watt RMS Power Amplifier

For high output levels — especially at the lowest musical frequencies — a large amplifier is a must. The faithful reproduction of deep bass requires *power*! And it is the MX-2000's 300 watt RMS internal amplifier, based on M&K's time tested and highly reliable amplifier topology, that gives it this power — making it one of the most powerful amplified subwoofers available.

Furthermore, a newly introduced high current power supply gives the MX-2000 outstanding transient capabilities plus exceptional dynamic headroom.

### Building on Excellence

M&K's 15+ years of experience in the design and manufacture of subwoofers is unmatched. Each M&K powered subwoofer achieves optimum performance through careful matching of its cabinet, speaker drivers, and internal amplifier. Moreover, maximum flexibility is built in, making it easy to connect and sonically balance to your own system.

You can drive the MX-2000 with any amplifier, electronic crossover, or preamp. An independent control lets you set the bass level wherever you choose. And, a separate continuously variable adjustment lets you set the upper roll-off frequency anywhere from 50 Hz to 125 Hz.

### The Only Choice

Building on M&K's legendary high level of subwoofer excellence, the MX-2000 becomes M&K's finest achievement in a subwoofer — blending seamlessly with any high performance speaker — from M&K Satellites to the best electrostatic panels. And, with its remarkable output capability, superb transient response and low distortion, it is "the only choice".

Amp Power: 300 watts RMS  
Frequency Response: 20 — 125 Hz  $\pm$  3db  
Impedance: Preamp Input 15K ohms  
Power Amp Input 600 ohms  
Weight: 105 lbs.  
Dimensions: 23" (H) x 18½" (W) x 25½" (D)

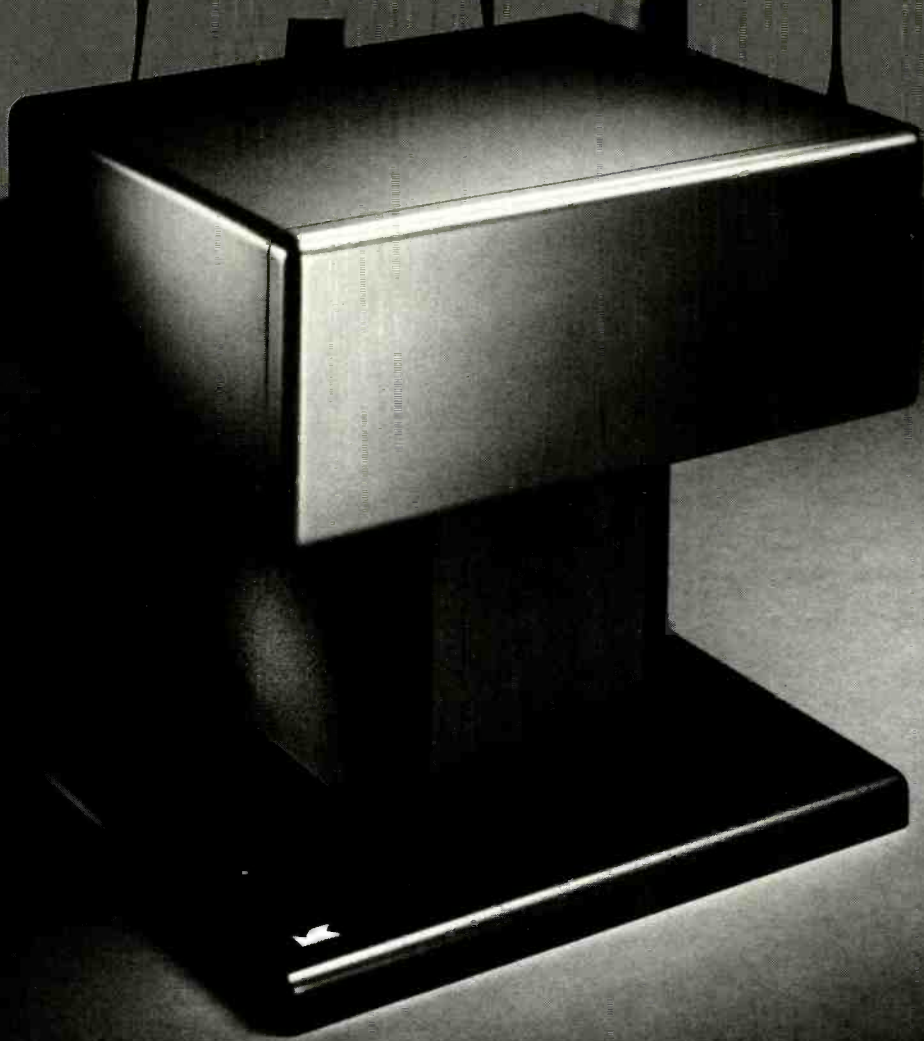
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# BRASS



M X • 1 0 0 0

P O W E R E D P E D E S T A L S U B W O O F E R

M I L L E R & K R E I S E L S O U N D C O R P O R A T I O N

**BASS** — that deep, rich, thunderous sound that moves your body as it excites your ear — M&K brings it alive in a form that will delight and astound you:

### The MX-1000

As a powered pedestal subwoofer, the MX-1000 does two remarkable things: It integrates a high-performance subwoofer into a pedestal — for your large screen television or monitor, and it achieves a sonic breakthrough that makes it outperform conventional speakers and subwoofers.

Virtually no other upgrade to your system will enhance your audio and video experience so dramatically — capturing the impact and realism of a live performance.

### Rarely Does a Product Achieve So Much

**SOUND:** As part of the most advanced audiophile systems, the MX-1000 performs virtually without peer — achieving a new level of power and authority in the low end, with even greater transient speed and clarity.

Building on M&K's tradition of smooth and extended deep bass, the MX-1000 advances audio technology to create sound with an energy you can feel.

**PEDESTAL SUBWOOFER:** Functioning as both a subwoofer and a pedestal for your large-screen television or monitor, the MX-1000 is a major achievement in "form follows function" — and M&K is the first to bring you this integrated capability in a high-performance speaker.

Placing a conventional speaker, especially a subwoofer, too close to a television can severely distort the picture, due to the magnetic field generated by the powerful driver magnets — with your only option being to locate the speaker up to several feet from your television — until now!

Designed so the high-power driver magnets do not interfere with your television's picture, the MX-1000 combines this important function with a significant sonic advancement to help you create the ultimate home theatre.

**SCULPTURAL FORM:** As a thing of beauty in itself — the unique design of the

# DEEP BASS

POWERED PEDESTAL SUBWOOFER



MX-1000 sets it apart from conventional speakers. Its sculptural form, satin finish, and graphite color make it an ideal complement to the colors and lines of contemporary audio and video equipment.

Use it as a free-standing pedestal/table or combine it with other components to create a spectacular audio/video surround-sound home theatre. Either way, the MX-1000 elegantly complements the 1980's interior.

**APPLAUSE:** In recognition of its unique design, the MX-1000 was selected as one of 1988's most innovative products by a panel of industry representatives and writers, and showcased at the Consumer Electronics Show's prestigious Design and Engineering Exhibition.

### Technically Ingenious —

### The Back-to-Back, Horizontal, Dual Driver System

The MX-1000's impressive advancements come together to set new standards for smooth and deep bass; superb transient response; wide dynamic range; and low distortion.

Key to this performance is M&K's unique *back-to-back, horizontal, dual driver system* — a configuration in which each of the 12-inch drivers couples to the other, practically doubling the MX-1000's efficiency.

Equally important is a brand-new 12-inch subwoofer driver designed by M&K engineers. Utilizing a high-power magnet and voice coil assembly, it even further enhances the MX-1000's performance. And, by employing two of these drivers, it gives you more bass radiating area than you get with one 15-inch unit.

M&K's "back-to-back" configuration is a true advance, achieving the virtual equivalent of a pulsating sphere in the base of the MX-1000 — generating pressure wave fronts that you can feel from across the room.

### Building On Excellence

M&K's 15 years of experience in the design and manufacture of subwoofers is unmatched. Each of M&K's powered subwoofers achieves optimum

performance through careful matching of its cabinet, speaker drivers, and internal amplifier. Moreover, maximum flexibility is built in, making it easy to connect and balance it to your own system.

You can drive the MX-1000 with any amplifier, crossover, or preamp output — even your television's built in amplifier. An independent control lets you set the bass level wherever you choose. And a separate adjustment lets you set the upper roll-off frequency between 50 and 125 Hz.

### The Only Choice

The MX-1000 redefines the subwoofer standard, and it scores a dramatic achievement in audio/video product design. But best of all, it brings alive — in your home theatre — a level of realism that will astound you!

Amp Power: 400 watts peak  
Frequency Response: 20 — 125 Hz  $\pm$  3db  
Impedance: Preamp Input 15K ohms  
Power Amp Input 600 ohms  
Weight: 115 lbs.  
Dimensions: 26" (H) x 28" (W) x 21.5" (D)

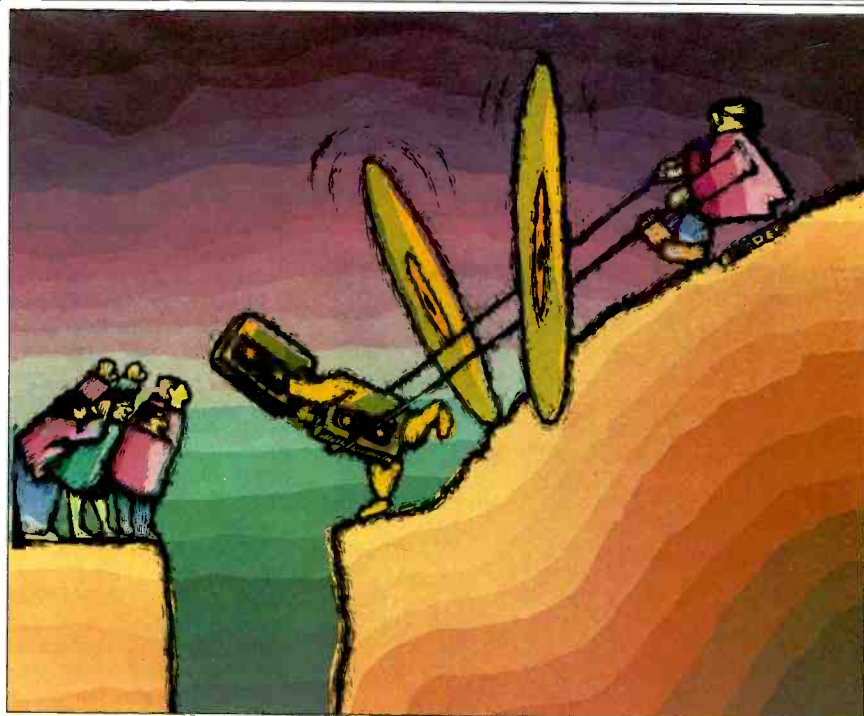
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# DAT DEAL'S DONE



**A**t last there is hope that we long-suffering audio consumers may be able to purchase R-DAT recorders through legitimate retail channels. They have, of course, been available from so-called "gray marketers," who bring over a few at a time from other parts of the world where recording companies have less influence than they seem to have in the U.S. However, after two years of fiercely resisting the importation of R-DAT machines into this country, the record industry has finally come to an agreement with the makers of these state-of-the-art digital tape recorders. After over a year of insisting that Congress mandate the incorporation of a flawed copy-inhibiting system in DAT machines before they could be accepted, that "solution" was dropped when the National Bureau of Standards agreed with *Audio's* own finding that the Copy-Code scheme was unreliable and degraded musical quality. After broadly hinting that only a foolproof method of royalty collection for each "copy" of a record or tape made by a consumer for personal use would satisfy them, the record companies finally agreed to a solution that involves no royalties whatsoever—at least as far as R-DAT recording is concerned.

Only a few months ago, I reported on the details of the digital Solo copy-inhibit system, which was developed by the Philips Company of The Netherlands ("Spectrum," July). Philips engineers described the way the system worked to me and several other visitors from the U.S., and I could do nothing but accept their word that there was only one kind of Solo—despite persistent rumors that there were variations on the Solo theme that went by such names as Solo Plus or Solo II. Well, with all due respect to those Philips engineers, I'd like to give them the benefit of the doubt and say that perhaps when I was given those details, there was only one version of the Solo copy-prohibit system. This was the version I described as permitting one lone digital-to-digital copy to be made of a digital program source such as a Compact Disc or a prerecorded DAT.

The compromise was reached at a meeting held in Athens, Greece, on June 9th and 10th of this year, at which representatives of the Recording Industry Association of America (RIAA), the International Federation of Phonogram and Videogram producers (IFPI), and the DAT hardware makers were present. It involves not Solo, as it was originally described to me, but the new

Serial Copying Management System (SCMS). Here's how SCMS will work.

As previously reported, with Solo and now with SCMS, as well, you will be able to make one digital-to-digital copy of any digital program source. The current anti-copy "bit" flag found on nearly all CDs will permit a previously non-copyable CD to be copied once. Let's assume you recorded a single digital-to-digital copy of whatever program source you desired. If you then tried to make a copy of the copy, in the digital domain, you would be unable to do so. You could, however, take a new blank tape and repeat the single-copy process as many times as you wished. This arrangement will allow users to make compilations or even DATs of an entire CD, for example, for use in car DAT players, etc. (This, as we all know but as the RIAA was reluctant to admit, is the main reason why most people make tapes of recordings in the first place.)

What the SCMS version adds to this involves the *analog* inputs of future R-DAT recorders. Now follow this closely, because it gets a bit complicated. Suppose you connect the *analog* outputs of your CD player to the analog line inputs of your R-DAT recorder. No problem, since the digital "bit" flag on the protected CD would not appear at the analog outputs of your CD player. You make a copy of your CD that's almost as good as the original digital version, and this copy is, of course, a *digital* tape recording made at the consumer sampling rate of 48 kHz. While that digital tape recording was being made, however, an identifying "bit" was added to the subcode area of the DAT. Now suppose you want to edit that tape by making a digital-to-digital second-generation copy onto another DAT, using a second R-DAT machine. Again, you will be able to do that. However, a second identifying "bit" of a different sort will now be added to your second-generation edited tape. If you now try to take that second-generation tape and make a third-generation copy from it, you will be prevented from doing so by the new microprocessor chip/software combination that will be incorporated into all new R-DAT recorders.

The recording companies' reasoning for this limitation is pretty clear. While

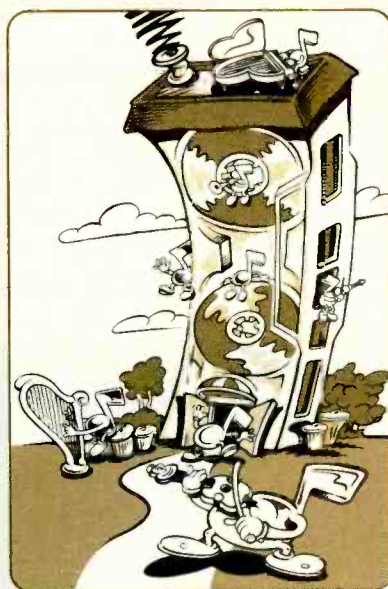
Illustration: Robert Bender

they grudgingly admitted that making a recording via the analog inputs to a DAT recorder does not yield the same quality, S/N ratio, or dynamic range of a direct digital-to-digital transfer, they point out (quite rightly) that once the small loss is sustained, other digital-to-digital recordings made from an analog-to-digital original tape would undergo no additional losses. Further, such subsequent recordings, therefore, would be perfect clones of the marginally degraded original DAT recording made via the analog inputs. This two-copy (original plus edit) limitation addresses those concerns.

As I understand it, however, if you want to keep making single copies of the first DAT tape by using it as the master and putting in a new blank tape for each "second-generation" copy, SCMS will not prevent you from doing so. Thus, from this consumer's point of view, the solution seems to be a satisfactory one. It will only prove to be effective, however, if the parties can induce our government to pass legislation specifically requiring the types of copy-prevention techniques described. Without such legislation, the solution becomes a voluntary one, and there is no guarantee that every manufacturer of audio equipment will agree to abide by it.

Not everyone may be as happy about the solution as I am, however. Consider, for example, the plight of musicians and composers who are just starting out. Together with successful musicians, they formed an organization called "Musicians for DAT" nearly two years ago, when the DAT battle first began. Let's look at how SCMS will affect them.

The young musician who hasn't quite "made it" saves up enough pennies and buys a consumer DAT recorder a year from now. Using microphone inputs—if they are available on the DAT recorder—or a mike mixer feeding into the line-level analog inputs of the DAT recorder, the musician records a new song. Say the recording needs major editing and perhaps some overdubbing. The musician borrows a second consumer DAT machine from another musician friend and, together, they try their hand at editing the "master" tape. So far, so good! SCMS allows them to make a



## IS YOUR CLASSICAL MUSIC SUFFERING FROM POOR HOUSING CONDITIONS?



*High resonance housing will put any tape in a nasty mood. Especially when pests, such as modulation noise, gnaw on the purity of digitally sourced music.*

*At TDK, we believe the formula for perfect reproduction includes not only technologically superior tape, but housing that enhances its performance.*

*Our incredible new SA-X, for example, features an ultra low resonance SP-ARII mechanism. By utilizing our unique co-molding technique, the unified two-layer shell realizes maximum total rigidity to improve reliability. Which drastically reduces modulation noise—an enemy of clear, pure sound that even noise reduction systems are powerless against.*

*This undesired "noise" is also attacked by SA-X's revolutionary magnetic characteristics and smooth, flat tape surface. First, there are the densely packed and uniformly distributed ultra fine Super Avilyn magnetic particles. Then, there is the advanced dual coating technology.*

*Together, the result is an unbelievably quiet tape with an exceptionally low bias noise of -61.0 dB. Plus, low and high frequency MOLS of +5.0 dB and -6.5 dB respectively.*

*And SA-X, which provides transparent reproduction of the most powerful digital sources, is available in convenient lengths of 46, 60 and 90 minutes.*





For most, the DAT compromise is a good one, but musicians and composers might not be happy about the solution.


second, edited tape. They discover, however, that the resulting recording still needs further editing. They pop the second-generation tape into one of the recorders and try to make a third-generation tape, using the other machine. Oops! The machine refuses to go into the record mode as it senses the "dou-

ble-inhibit" flags in the subcode areas of the second tape.

Now consider the full impact of this dilemma. The musician, using personal microphones, has recorded personal material. There is no copyright involved, and yet the musician cannot edit and re-edit this recording as many

times as necessary to produce a good audition tape. Caught in this bind, the musician will have only two alternatives. Go back to square one and edit that first master tape again, onto a second tape, hoping that all the editing requirements can be accomplished in one additional pass. If that doesn't work—and more often than not it won't, what with the amount of editing and overdubbing typical on today's most successful recordings—the musician can choose the second alternative: Buy a "professional" DAT recorder, at considerably more cost, that has none of the SCMS restrictions.

For most of us, I think, the DAT compromise is a good one. Nonetheless, it may take several more months until the new R-DAT machines equipped with SCMS chips reach our shores. It is important to emphasize that this solution applies *only* to DAT. In fact, at the meeting, specific reference was made to the fact that future emerging technologies are not necessarily to be bound by the same rules. You can interpret this however you like. To me, it spells future attempts at imposing some automatic or technological means of extracting royalties from consumers who choose to copy copyrighted material—even if only for their own personal, noncommercial use. The next battle likely to occur will begin when someone announces the commercial availability of an affordable, recordable CD.

My guess—and this is strictly my own guess—is that the recording industry suddenly realized that, come what may, there will be a system for erasable/recordable CDs before long. The introduction of such a technology offers no means whatsoever for the record industry to profit, since they are already reaping the profits from CDs. The thinking of the record companies may therefore have been something like this: If recordable CDs arrive before DAT can establish itself as a recording and playback format, DAT could be bypassed entirely in favor of recordable CDs. Thus, perhaps it would be wiser to start issuing some DAT prerecorded software, for whatever few dollars of profit can be made from that medium, before it is overtaken by recordable CDs. And so, the profit motive still works—as always! 



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Bach, Brandenburg Concertos Nos. 4-6  
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Cleveland/  
Dohnányi  
15018

Ute Lemper Sings Kurt Weill • Mack The  
Knife, Speak Low, I'm A Stranger Here Myself,  
11 more. London 15163

Copland, Billy The Kid; Rodeo (Complete  
Ballets) • St. Louis Symphony/Slatkin.  
"Brilliant."—Gramophone Angel 41491

The Performing Piano,  
Vol. 1 • Live performances  
by Paderewski, Rachmani-  
noff, Schnabel, others.  
Newport Classic 14708

Prokofiev, Peter And The  
Wolf; Tchaikovsky,  
Nutcracker Suite • Dud-  
ley Moore, narrator.  
Boston Pops/Williams.  
Philips 15137

Handel, Music For The  
Royal Fireworks; Concerti a Due Cori Nos.  
2 & 3 English Concert/Pinnock. Archiv 25375

Classic Marches • St. Louis Sym./Slatkin.  
Rakóczy March, Turkish March, Wedding  
March, Radetzky March, more. RCA 00996

Adams, The Chairman Dances • Plus Chris-  
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Beethoven, Symphony No. 6 (Pastorale); 2  
Overtures • Academy of Ancient Music/Hog-  
wood. L'Oiseau-Lyre 25397

Perlman: Mozart, Violin Concerto No. 1;  
more • Vienna Philharmonic Orch./Levine. "A  
pleasure."—Fanfare DG 25438

Van Cliburn: Rachmaninoff, Piano Sonata  
No. 2; Prokofiev, Piano Sonata No. 6;  
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## SUPER SONICS CAR



If you've owned a stereo component system for more than a couple of years—whether it's a car audio system or one housed in your home listening room—you've probably wished, as I have, that you could start all over again, from scratch! When the people at Toyota decided to launch a luxury car, through a totally new division called Lexus, they were in the enviable position of being able to design everything from scratch, including a couple of superb car audio systems. The Lexus LS 400 automobile became available on September 1. A couple of months before its official introduction, several of us were invited to check out the two sound systems that would be available in this luxury car. I not only learned the technical details concerning the components of each of the two available sound systems but was given the opportunity to listen to each system while driving over a 26-mile course that included country roads, major highways, and even some city streets.

The LS 400's suggested list price of \$35,000 includes the "standard" sound system, designed primarily by Pioneer. Plunk down another \$900, and the car will be delivered with a CD six-disc changer. For yet another \$1,000, your Lexus LS 400 will be equipped with a premium system, with electronics designed and built by none other than Nakamichi, whose reputation for quality tape decks and other audio components is justly high.

Before I delve into the details of just what goes into these two sound systems, I must point out that, during both static and road tests, I made sure to check out sound quality in the driver's seat, front passenger seat, and rear passenger seats. Much to my surprise and delight, these were the first car audio systems that sounded as well balanced while sitting in the rear as they did up front. Furthermore, with the fader control set to its midpoint, there was virtually no audible difference in level when I shifted my listening position from front to rear seats.

Both the Pioneer and the Nakamichi systems feature exactly the same number of loudspeaker drivers (seven) and amplifiers (five); I'll discuss the differences between them in a moment. An important feature associated with the radio portion of the system is that the main radio antenna length is adjustable for optimum reception of AM and the high and low ends of the FM band. As far as I know, no other car manufacturer has ever taken the trouble to provide antennas whose length can be altered automatically for optimum reception at different wavelengths. Even more important is the second, or FM diversity, antenna. The use of two antennas to minimize the disturbing effects of multipath distortion and interference in a moving vehicle is not a new concept, and let me tell you, it really works. There were none of the usual "smearing" and "splattering"

sounds caused by multipath problems. All I could hear while driving through the hills of upper Westchester County, in New York State, was an occasional, brief, click-like sound, lasting for no more than an instant as the system analyzed incoming signals and switched, within 250  $\mu$ S, from one antenna to the other.

Lexus sound engineers chose to do the switching ahead of the r.f. stages, rather than provide two separate sets of r.f. stages and do the switching at the i.f. level. There are arguments for both approaches, but the fact is that, in the real-world driving conditions I encountered, the Lexus approach to diversity antenna reception worked as well as I could have ever hoped.

The actual physical placement of all seven speaker drivers and electronic components attempts to achieve equal sound quality front and rear. The identical 4½-inch extended-range speakers (in their own bass-reflex enclosures) are in both the front and rear doors, while the separate tweeters are mounted high enough, up front, for their energy to reach rear passengers and the front-seated driver and passenger. The benefits of speakers in each of the four doors were immediately apparent. They contributed to natural front localization for front and rear passengers. They produced a balanced four-corner result, with good imaging that extended to each seating location. Also, there were no direct reflections off the windshield or backlight. Finally, they eliminated the uncomfortable localized sound levels to rear passengers typical of speakers mounted in the package tray behind the passengers. The only speaker mounted there was the nondirectional 8-inch subwoofer, which utilizes the entire, carefully sealed trunk volume as its "infinite baffle" enclosure.

Of course, all of these unusual speaker placements were made possible by the fact that the designers of the Lexus automobile and the designers of the Lexus LS 400 sound systems were able to work together right from the conceptual stages of the new car—a luxury rarely afforded to sound equipment engineers, who are often forced to work around existing structural features that have been "frozen" into a car design before any consideration is giv-



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The Lexus diversity tuning system really works. It reduces multipath "splats" and smears to occasional, brief, click-like sounds.



en to the car's factory-equipped audio systems. And, of course, aftermarket installers are often confronted with the same insurmountable and unalterable structural details of a car into which they hope to install a good sounding audio component system.

Since the control layout (with buttons large enough for human fingers to engage) and the number of amplifiers and speakers are the same for both the Pioneer-based LS 400 audio system and the Nakamichi-based system, I was naturally curious to learn why the latter system cost a full \$1,000 more than the standard one. Some of the answers came when I was given the published specifications for each, but the real differences were more obvious during my subsequent road tests.

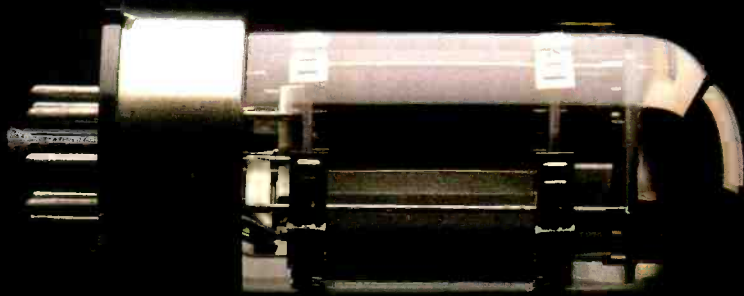
To begin with, the Nakamichi system employs that company's full-logic tape transport system as well as their premium, narrow-gap playback tape head, with 20-kHz response. The subwoofer amplifier used in the Nakamichi system has higher current-output capability, uses a discrete power-output stage, and can deliver continuous power output (below 80 Hz) of 70 watts into 4-ohm loads at less than 0.1% THD. The Pioneer subwoofer amplifier, by contrast, has a continuous power output rating of 25 watts into 2-ohm loads for the same THD rating. As for the four additional door speaker amplifiers, those supplied in the Nakamichi system have a continuous power rating of 14 watts per channel, while those in the "standard" Pioneer-based system offer a continuous power rating of 10 watts per channel. Nakamichi also used balanced inputs in each stage of

their amplifiers to eliminate any noise that might be generated via interstage ground loops. There are differences in the speaker drivers used as well as some other differences in selection of circuit components, etc.; however, the optional Compact Disc player and radio circuitry seemed to be the same for both systems.

On the road, two differences between the systems were readily noticed by me and all of my colleagues who had a chance to test-drive the systems. First, the Nakamichi simply did not "run out of steam." Regardless of the setting of the volume control (a delightful round knob that rotates, as all good volume controls should), there was no evidence of clipping or overload distortion. In this respect, the Pioneer system, if overdriven, did show audible signs of strain—despite the dynamic bass-limiting system incorporated in both systems. The other difference noted was in overall balance. The Pioneer was noticeably brighter in the high end—a response that may appeal to some listeners but that I found a bit harsh. I would hasten to add that this seemingly emphasized treble was easily tamed by the very slightest counterclockwise rotation of the treble control.

Lest you get the wrong impression, I certainly don't want to demean the overall quality of the Pioneer-based system. Both it and the Nakamichi premium system represent a superb effort on the part of a great many people concerned with the introduction of the Lexus LS 400. The results equal, and in some ways surpass, anything I have ever heard in a factory-equipped car audio system. **A**

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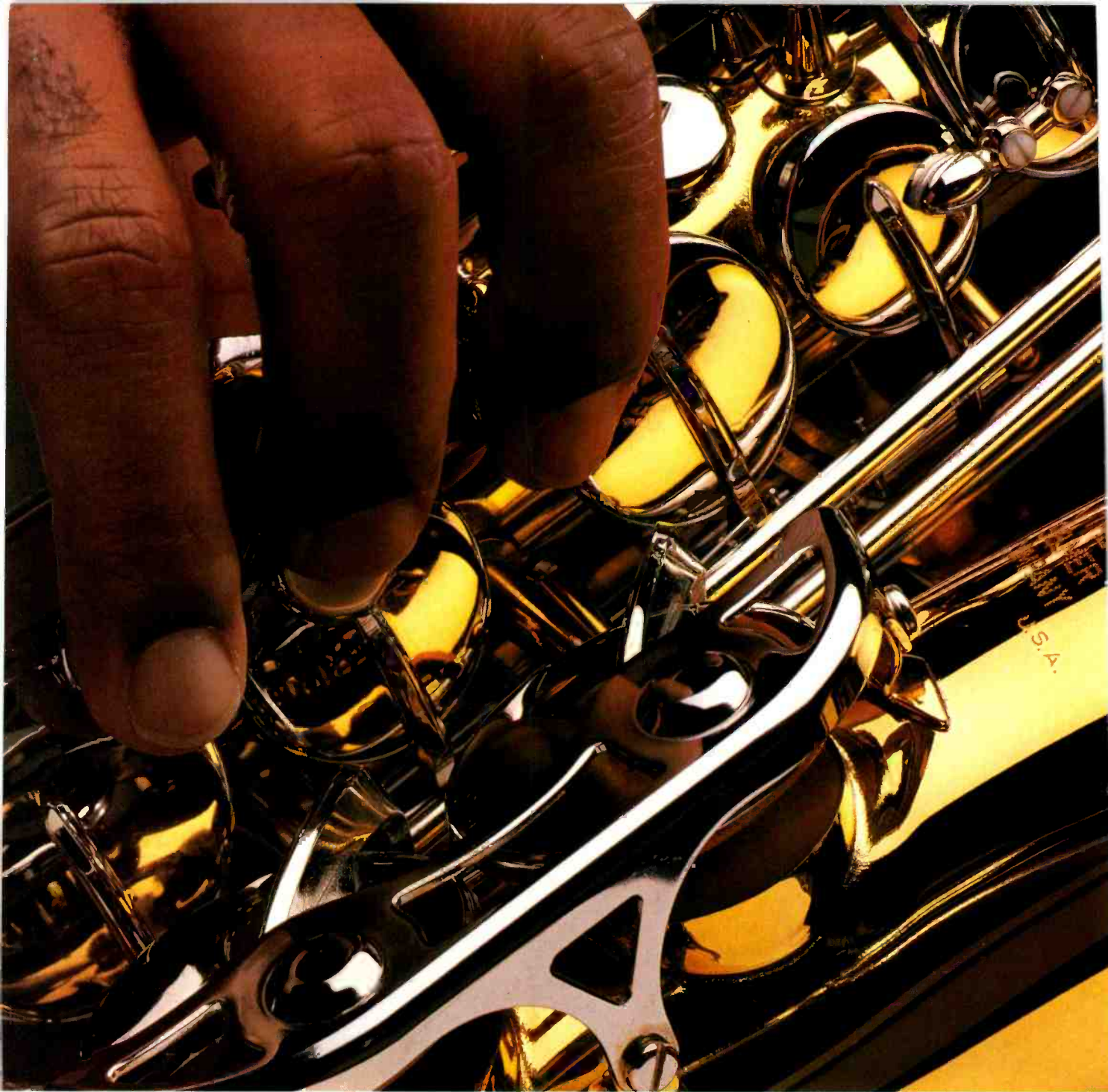
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The Counterpoint SA-3000 is our best value in preamplifiers. A "straight wire with gain" may describe its circuitry, yet sophistication abounds. The SA-3000 is noted for defined authoritative bass and trebles, accompanying a reference midrange.

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Most serious music lovers use moving coil cartridges. Yet, most underestimate the importance of amplifying the delicate MC signal-to-phono level. Compromise no more. The all-vacuum tube Counterpoint SA-2 headamp includes a separate, regulated power supply. The SA-2's sheer musicality will provide hours of unfatigued listening pleasure.

Over the years, Counterpoint amplifiers have continually set new standards. Our all-tube SA-4 monoblocks provide 160 watts each of unprecedented tonal purity, provided in part by the output transformerless OTL design. If you're looking for amazingly natural sound, look no further.

Next, we are pleased to present the best value in the "stratospherically priced superamp category." The Counterpoint SA-220 hybrid power amplifier provides 220 high current watts per channel that can drive any loud-speaker with consummate musical authority. Flick a switch to create an astonishing 700-watt monoblock! And yet, the SA-220 is "bulletproof," offering the first protection circuit that does not degrade sound.

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## The Experts on Counterpoint:

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*The Counterpoint SA-11 is not only the most beautiful sounding line section extant, but is also the most accurate and the most musically truthful.*

*And the SA-11 is more than sound. As a user oriented product, the SA-11 is the most elegantly convenient and flexible line section made, for you the music lover. It is at once a fitting control center for any audio system in the finest homes, and for the finest audio systems in any home. And, as a technical achievement, the SA-11 represents a triumph of heroic design engineering, earned the old fashioned way.*

... International Audio Review Hotline 54

*Quite simply we love this pre-amp. The bass extension and detail rank with the solid state units. The linearity from top to bottom is seamless and natural-sounding. Whether listening to massed strings or voices, there is an abundance of air and depth creating the most realistic stage. When one adds the assets of construction, convenience and execution, these features equal success of an unparalleled magnitude. We have not heard the SP-10, Krell, or a few of other very expensive pre-amps, but there is no quibbling with the fact that the SA-5 (the SA-5000's predecessor) sets a new standard undreamed of just a couple of years ago.*

... Audiogram Newsletter No. 18

*The Counterpoint SA-3.1 (the SA-3000's predecessor) is one of those very special products which is exquisitely detailed, revealing of the source material, and yet easy on the ear. There's that naturalness of timbre which I find only with tubes. And nary a touch of tube glare.*

*This is a great preamp, and I have not heard anything else at or near the price that comes close. It's also a preamp that suggests (to me) the superiority of analog over digital, even with speakers less transparent than the Monitors.*

... Sam Tellig, Stereophile, Vol. 11, No. 5, May, 1988

*This little power amp, a budget hybrid, is an amazing sonic performer. Not only is it the best sounding overall of all the power amps in this survey. It also beat most other solid state power amps we have evaluated in the past, many of which are far more expensive. In fact, in most sonic parameters the Counterpoint SA-12 (the SA-100's predecessor) is in the same league as the very best solid state power amps, among which we count just three: the Robertson 6010, the very latest version of the Streets 950, and the very latest version of the Rowland Research 7 MKII. These three power amps cost many times the SA-12's price. And the little \$995 Counterpoint SA-12 actually sonically embarrasses some of the world's most expensive solid state power amps, which in point of sonic fact don't quite deserve their prestigious reputations among audiophiles and the world's press, e.g. the various Mark Levinson power amps, the Krell 50 and 100 watt stereo units (the Krell 2000 watt mono uses a different circuit that sounds better), the Perreux amps, etc.*

*Our first piece of consumer advice is directed to those of you who are considering a budget level solid state power amp, perhaps in the \$500 price range. The SA-12 gives so much, so very much more overall sonic quality for your money, that we ask you, we beg you, to try to stretch your budget to include the SA-12.*

... International Audio Review Hotline 42

*Just as the air grew warmer around the SA-20 (the SA-220's predecessor), so did my enthusiasm for the amplifier. In extensive comparisons with the Perreux PMF-3150, an all-MOSFET design rated at 300 watts per channel, Counterpoint's SA-20 proved the caudal warmth of vacuum tubes, notably so in the engaging presence it brought to vocal music.*

*What's more, the SA-20's MOSFET output stage nullified the notion that any sonic advantages in tube gear come at the expense of dynamic punch. (That's the advantage of the hybrid design.) As for the compatibility of tubes and MOSFETs, the SA-20's clarity, detail and almost holographic stereo image left no room for doubt.*

*But there's something of Stradivari and Steinway wired into the SA-20. An amp that can do what the Counterpoint does for Telarc's Mahler Second, in its most earth-shattering moments, possesses more than muscle, more even than elegance. That electrified objet embodies a strain of musical soul.*

... High Performance Review, Vol. 5, No. 1, Dec. 87

*There are some audio products which can deliver truly superb sound of a kind that really makes all the frustrations of building a high end system worthwhile, but which require exceptional attention and care. The Counterpoint SA-4 is a good case in point. With the right speakers, it competes for the title of the most transparent amplifier available at any price.*

*Transparency is getting to be an overworked adjective, but the Counterpoint SA-4 achieves it to an extraordinary degree. It provides a tremendous amount of detail and information in a musically natural way. It is sweet and airy.*

... Anthony H. Cordesman, Stereophile, Vol. 9, No. 4, June, 1986.

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## SCES SCENES



**A**nother Consumer Electronics Show has come and gone, this one a little lower in attendance than in recent years but just as active in terms of behind-the-scenes order taking. It was also a CES which stressed video at the dawning of the era of high-definition television (HDTV). You may recall my rave review of the Fosgate/Barco demonstration at the Las Vegas CES ("Spectrum," April). If anything, their demo was better this time because Fosgate took the time to remake the video presentation so that it was more attuned to American tastes. Their room was bigger, and it gave the impression of a small movie theater, rather than the oversize living room feeling you got in Las Vegas.

In a main-building display, Sharp demonstrated an LCD video projection system which was only slightly larger than a carousel slide projector. The way it works is reminiscent of the old Philips eidophor projection system invented years ago. Essentially, there is an internal white light source that is beam-split into three additive primary colors. Each color is then "modulated" over the entire picture area by an LCD plate which has about 92,000 elements, or pixels, and which can be varied over the full range from light to

dark by derived color video signals. The three sets of video signals are then collected and projected out of a single lens system. The chief virtue here is that the projector takes little setup time. There are no convergence problems, and there is no flicker since the white light source is on continuously. On the debit side, if you look carefully enough you can see the individual pixels on the screen. Also, the absolute light-to-dark range is somewhat limited as compared to the best 3-lens projection systems. Time will improve all of this but, even now, the system is ready for many consumer applications.

On the audio electronics front, Sony stole the show with their new Model E1000ESD digital preamplifier. This unit converts all analog inputs to digital for subsequent equalizing, filtering, and compression/expansion functions. Any digital input signals are, of course, kept in that domain. In addition to providing the expected functions of a preamp, the unit allows for multi-channel processing in the Dolby surround mode as well as several options in stereo enhancement via reverberation and delay. Such a device is something we've all dreamed about and expected to pay quite a lot for, but the price of this unit is a real shocker—only \$1,000!

How has Sony managed to do this? With proprietary ICs, which address the specific tasks at hand, and much like a home computer, the key to all these functions is software. Once the initial investment has been made in memory and processing capability, a new function is as simple as giving the system a new set of instructions.

The introduction of this unit at \$1,000 also tells something very important about how the Japanese stay at the leading edge of consumer electronics. The payback period for a heavy technological investment is not the following quarter or even the following year; it is probably measured in decades. An important aspect of this is the public's perception of Sony as the continuing leader in all things electronic for the consumer. This identification goes all the way back to the earliest transistor radios, and it has continued through the era of the Walkman and, of course, to the CD. One truly wonders if the U.S. industry is capable of seeing things in this light. (The Sony E1000ESD digital preamplifier is set for release this fall.)

The great majority of the CES exhibits are located in Chicago's McCormick Place complex. There are two major multi-floor areas, both with a limited number of individual exhibit rooms. Floors 3 through 8, in the adjacent McCormick Center Hotel, are used primarily for high-end (read, "audiophile") exhibits; the hotel's lower level and mezzanine are occupied by larger, more broad-based audio companies. The real problem for audiophiles is that the rooms on the upper floors of the hotel, even with most of the furniture removed, are far from ideal as demonstration spaces. They are small, though that could be dealt with, but the air-handling is marginal, and the acoustic leakage from one room to another is capable of ruining a demonstration outright.

There are, however, some ways for a company to cope with this problem. Krell, for example, had a space on one of the upper floors where they were handing out fliers informing attendees that their major exhibit was in one of the nearby north-side hotels. I went there and was thoroughly impressed with a pair of the big Martin-Logan Statement electrostatic loudspeakers



Sony stole the show with the new E1000ESD digital preamp. It converts analog inputs to digital and will retail for a shockingly low \$1,000!

with dynamic subwoofers and, of course, the entire Krell line. Away from the roar of CES, they were able to mount a demonstration at their own pace and with their choice of program material.

Krell, along with Mark Levinson, Rowland Research, and a small hand-

ful of others, typify what is best and still unique about the U.S. audio electronics industry—small companies building no-holds-barred, heavyweight power amps and preamps, the set often going for the price of a small import car! Like so many of these companies, Krell's basic talents lie in advanced

analog circuit development. In approaching digital product development, they have set up a new company, Krell Digital Inc. Thus far, a CD player and a stand-alone digital processor have been designed.

Another way to solve the demonstration problem is to put together a co-venture between several manufacturers. This way, a large space can be contracted for and set up to do justice to all participants. An example here was the superb exhibit—easily the best sounding one at CES—jointly sponsored by Duntech (loudspeakers), Wadia (digital processors), dmp (jazz CDs), Mirror Image Audio (analog electronics), and RPG Diffusor Systems (room treatment). The space was a large room in the McCormick North hall. An outer section was used as a buffer zone, isolating sounds from the hallway. The inner room, with seating for about 25 or 30, benefitted from the large number of RPG diffusing elements which had been placed to the sides. Of course, there was a variety of music, but the accent was on the superb jazz recordings done by Tom Jung of dmp.

There are not many spaces in the whole of McCormick Place which lend themselves to this kind of usage, and perhaps this group of participants was just plain lucky. Whatever! You can be sure they will be back in the same place next year.

Snell Acoustics mounted one of the best demos possible at the McCormick Center Hotel, under the constraints previously mentioned. They had two pairs of loudspeakers behind a scrim, and the electronics rack was similarly hidden. A 7-minute DAT demonstration was played through one pair and then replayed through the other. The room could hold only about seven auditors at once, and they were asked to remain for the entire demo. The lights were then lowered. The demonstration itself consisted of short segments from a variety of CD sources, carefully chosen to point up the loudspeakers' abilities to handle various textures, timbres, and imaging requirements. At the conclusion of the demonstration, the auditors were asked to estimate the prices of the two systems, purely in terms of what they had heard. We had all been impressed, and we were surprised at

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Walking the audio aisles of CES, it is apparent that the complexion of the speaker business is changing in the direction of small systems.

the low price tags of Snell's two new models.

What this approach underscores is the necessity—of which too few companies avail themselves—of picking the proper demonstration material for difficult rooms. The semi-blind comparison and the scrim put the auditors in a realm of pure aural judgment. If you can't see how big the loudspeakers are or precisely where they are, only your ears are working. What about the marketing plug at the end? That's what CES is all about.

In my aforementioned review of last winter's CES in Las Vegas, I spoke of a few of the elder statesmen of the loudspeaker industry whose names are synonymous with product value and a dedication to music. This time, I want to draw attention to a younger contingent, notably the Thiel brothers of Lexington, Ky. I remember them years back, at the Pick-Congress Hotel and later at the Conrad Hilton, showing their hallmark—a sloped-front, floor-standing loudspeaker system. Their distribution is still largely through specialty houses, and their reputation for high performance has grown steadily. This year, their new Model CS5 loudspeaker system won an "Innovations '89" design award. The tall sloping baffle is now made of a molded marble/polymer mixture and has rounded boundaries for diffraction control. The 5-way system has first-order crossovers for transitions between drivers that are both power-flat and smooth in phase response. The dividing network uses its many elements in a conjugate design which smooths out individual transducer "ripples," a necessary step in order to make the first-order transitions work properly. The sloped baffle provides the correct time offset, tailored to the bandpass character of each driver, to produce a net minimum phase system. All of this without exotic devices—just plain, sensible engineering. Congratulations to all!

As you walk the audio aisles of CES, it becomes apparent that the whole complexion of the loudspeaker business is changing. There are more small systems, many of them three piece, and there are lots of "environmental" products designed to be built in and heard but not seen. This latter category is not generally of great tech-

nical interest, but let it be said that there are now subwoofers designed for in-wall installation!

The three piece or satellite with subwoofer phenomenon has been underway now for about three or four years, and part of its success has depended on the rapidly expanding video market,

which places a premium on small sizes and adaptability. For a growing number of consumers, audio is being thoroughly integrated into a home information/entertainment complex that is primarily video-based. The coming of high-definition TV will reinforce this all the more. A

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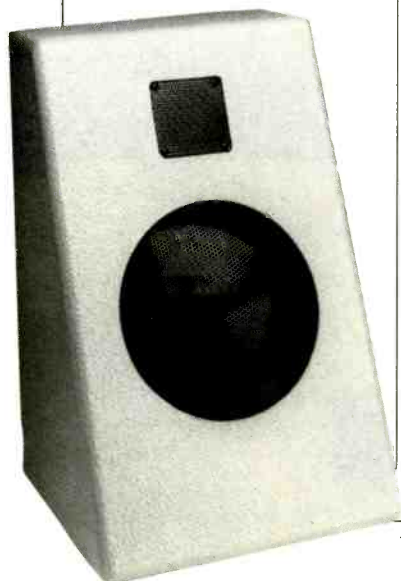
Designed for infinite flexibility, the Rainbow Rack system can be configured for any application, room dimension, or aesthetic "statement." Described by the company as "an erector set for the adult," the system is easily assembled using the accompanying allen wrenches. Virtually any design is possible, with almost endless options. Material is steel and is available in brushed chrome or black anodized finishes. Price: From \$150. For literature, circle No. 108



## NEAR Outdoor Speaker

The AES-2, from New England Audio Resource, is a weatherproof two-way system with a sloped front baffle for ear-level listening when the speaker rests on the ground. The drivers include an 8-inch woofer and a 2-inch hybrid cone/dome tweeter, both of metal alloy. Impedance is 8 ohms, but a 16-ohm version is available. Price: \$329.

For literature, circle No. 109



## Esoteric Sound Turntable

Not all "78-rpm" records were actually cut at that speed. Many were cut at such speeds as 71.29, 76.59, and 80 rpm, as well as the more common 78.26.



The Vintage six-speed turntable, from Esoteric Sound, can play all those speeds, as well as 33 1/3 and 45 rpm. A coarse-groove stylus for the P-mount pickup cartridge and a vertical/lateral phasing selector are optional. The turntable is driven by belt from a d.c. servo motor with pitch control. Price: \$229.

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## Neutrik Phono Connector

Designed to eliminate speaker-damaging grounding noise, the ProFi connectors are constructed with a "ground shell" which retracts into the connector body as the signal post is inserted into the phono jack, achieving ground first. The reverse occurs when the connector is removed. The connectors are available in nickel- or black-plated castings and are sold in pairs. Price: \$17.14. For literature, circle No. 112



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A sophisticated Learning Type Universal remote control is capable of learning 150 functions from other remotes. LCD readouts complements the system to provide complete fingertip control of this state-of-the-art CD player.

There is no question: the Philips LHH 1000 has set the gold standard for CD technology. It is the finest compact disc player currently available, for people with no tolerance for imperfection.







Philips

## Compact Disc Player

CD 960

A signal-to-noise ratio of 100 dB. Dynamic range of 96 dB. Channel separation greater than 100 dB. These are just a few of the superb specifications of the Philips CD 960 compact disc player, a player that offers audiophile-quality sound for the most demanding listener.

From its elegant design to the superior chip architecture of the digital-to-analog converter, the CD 960 is truly world class. Philips, the inventor of the compact disc, has been constantly refining CD technology. The specially-selected high-resolution version of the acclaimed TDA 1541-A dual 16-bit converter chip incorporated into the CD 960 is the culmination of those efforts. Coupled with a digital filter with four times oversampling that effectively eliminates any unwanted ultra-sonic noise, the CD 960 is a compact disc player that will become the centerpiece of your audio system.

Complementing the sophisticated digital engineering is superior analog circuitry including third-order Bessel filters, "Elna Cerafine" ceramic powder capacitors and four separate power supplies to



eliminate unwanted interference. And all circuits are mounted on a massive, 4.4 pound nonresonant, die-cast alloy chassis. Even the disc transport is die-cast aluminum alloy guaranteeing the single beam, broadcast-quality CDM-1 laser pick-up will track accurately and quickly with fast track access averaging less than one second!

Simple to operate—with a full-function remote—the Philips CD 960 has won accolades from the enthusiast press around the world. The CD 960 is a superior example of the art of musical engineering, one that could only come from the originator of digital audio.







The jog shuttle dial and LCD readout only hint at the advanced capabilities of the CDV 488's remote control. Not only can it provide frame-by-frame, noise-free slow motion at variable speeds, the handheld unit can also "learn" the functions of other remotes in your A/V system, making it the only remote you'll need.

## Philips CD Video Player CDV 488

**C**ompact Disc Video... the finest picture possible and pristine digital sound. The new Philips CDV 488 can play every optical disc format, from CD-3s to standard 5-inch CDs as well as full-length feature films on 12-inch CD LDs. And the Philips CD Video player is the first to handle the new 8-inch LD single... all without the need for adaptors. This ability to offer all forms of music and movies at the highest possible quality levels.

Video specifications of the combination player are a scintillating 440 lines of horizontal resolution. This translates to a picture finer by far than that of any VCR. Another Philips exclusive is a proprietary high resolution Y/C processor developed for the CDV 488. It divides the disc's composite video signals into separate luminance (Y) and chrominance (C) signals, then routes the two through the S-connector out to a high quality TV monitor/receiver. Colors are purer... images more lifelike... interference artifacts virtually eliminated. Video at its best. And a wealth of software is available to see and hear. Over 2,500 movies and concerts are on disc with dozens of new releases every month.

Along with the best resolution figures of any video format, the CDV 488 offers the viewer special nonpareil effects. The jog shuttle dial on the infrared remote delivers rock-solid still frames in forward and reverse motion due to an 8-bit digital memory. The dial even allows for variable speed forward and reverse scanning. Other special effects include mosaics and strobos.

Along with the finest video image, the CDV 488 has the state-of-the-art audio specifications one expects from the inventor of the compact disc. Signal-to-noise ratio is greater than 100 dB. Dynamic range and channel separation more than 96 dB. The CDV 488 utilizes Philips' top quality "Select Grade" TDA 1541 "AS-1" dual digital-to-analog converter chip and a digital filter with four times oversampling. This translates to a real resolution of more than 15.75 bits out of the maximum possible 16 in the digital audio format, a superlative achievement.

For those who want the finest in sight and sound in one machine the answer—is Philips CDV 488.



Advanced digital technology allows the CDV 488's remote control jog shuttle dial to fast forward at up to 10x speed or capture noiseless "stills" one frame at a time.



From hit singles to hit movies, the CDV 488 can play *all* optical discs without adaptors and is the first to accommodate the new 8-inch LD single.



The CDV 488's remote control can learn the functions of 10 A/V components and the easy-to-read LCD display highlights all important operations.



## Philips Consumer Electronics Company

A Division of North American Philips Corporation

### Compact Disc Players

#### LHH1000

#### CD960

#### CD880

|   |   |  |  |
|---|---|--|--|
| FREQUENCY RESPONSE                      | 20-20,000 Hz+/- .01 db  | 20-20,000 Hz+/- .01 db   | 20-20,000 Hz+/- .01 db   |
| PHASE LINEARITY                         | +/- .2 degrees  | +/- .2 degrees   | +/- .2 degrees   |
| SIGNAL TO NOISE RATIO                   | > 101 db  | > 101 db   | > 101 db   |
| DYNAMIC RANGE                           | > 96 db   | > 96 db  | > 96 db  |
| CHANNEL SEPARATION                      | > 100 db  | > 100 db   | > 100 db   |
| TOTAL HARMONIC DISTORTION               | < .0015% at 1 kHz   | < .0015% at 1 kHz  | < .002% at 1 kHz   |
| ULTRASONIC NOISE REJECTION              | > 60 db   | > 60 db  | > 60 db  |
| ANALOG OUTPUT LEVEL                     | 2V RMS, typical 1 kHz, all bits on  | 2V RMS, typical 1 kHz, all bits on   |  |
| ANALOG OUTPUT LEVEL, FIXED              |   |  | 2V RMS, typical 1 kHz, all bits on   |
| ANALOG OUTPUT LEVEL, VARIABLE           |   |  | 2V RMS, 64 steps of 1 db   |
| DIMENSIONS LHH-1001 TRANSPORT (APPROX.) | 17 <sup>7</sup> / <sub>8</sub> " W, 4 <sup>1</sup> / <sub>8</sub> " H, 13 <sup>3</sup> / <sub>8</sub> " D |  |  |
| LHH-1002 D/A CONVERTER (APPROX.)        | as above  |  |  |
| WEIGHT, COMBINED (APPROXIMATE)          | 62 lbs.   |  |  |
|   | RC-5 remote control compatible  | RC-5 remote control compatible   | RC-5 remote control compatible   |
| DIMENSIONS (APPROXIMATE)                |   | 16 <sup>3</sup> / <sub>4</sub> " W, 4" H, 15 <sup>1</sup> / <sub>4</sub> " D | 16 <sup>3</sup> / <sub>4</sub> " W, 4" H, 14 <sup>1</sup> / <sub>2</sub> " D |
| WEIGHT (APPROXIMATE)                    |   | 21 lbs.  | 22 lbs.  |

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# Restoring Old Masters

DANIEL SWEENEY



**A**s the Compact Disc established itself as the dominant audio format, the market for older music in the new format became unexpectedly brisk. However, material going back to the 1960s and earlier was generally recorded with machines and tape formulations calling for at least mildly different calibrations than those in use today, while, at the same time, mixing and equalization often mirrored industry trends which have fallen into abeyance. More importantly, the recording medium itself, magnetic tape, almost invariably suffers some deterioration with the passage of time. If the tape has been carelessly stored or utilizes one of the more volatile tape formulations, the damage to the irreplaceable master may be very considerable. Not infrequently, older tapes are in such a state of dissolution that they can only be played once because the playback process will literally strip the oxide from the backing.

With such problems in mind, Agfa, a leading supplier of magnetic tape for mastering, held a seminar on preserving, restoring, and transferring archival master tapes on April 12th of this year, at the Registry Hotel in Studio City, California, adjacent to the MCA and Universal Studio facilities. The occasion was used to announce NXT, a new chemical treatment developed by

Agfa which permits the playback of badly deteriorated master tapes.

The seminar was divided into four sections. The first was a panel discussion which featured Lee Herschberg, director of engineering for Warner Bros. Records; Gene Wooley, vice president of recording and quality assurance for MCA; Andy McKaie, director of artists and repertoire for MCA, and John Matarazzo, national technical manager for Agfa. The discussion focused on how tape playback and recording standards have changed over time, as well as on the characteristics of various old and new tape formulations; tape storage and preservation were discussed at length.

The second section was devoted to the digital processing techniques developed by Sonic Solutions to digitally

Older masters are often in such a state of dissolution that playing them just once will literally strip the oxide from the backing.

Illustration: John Hart



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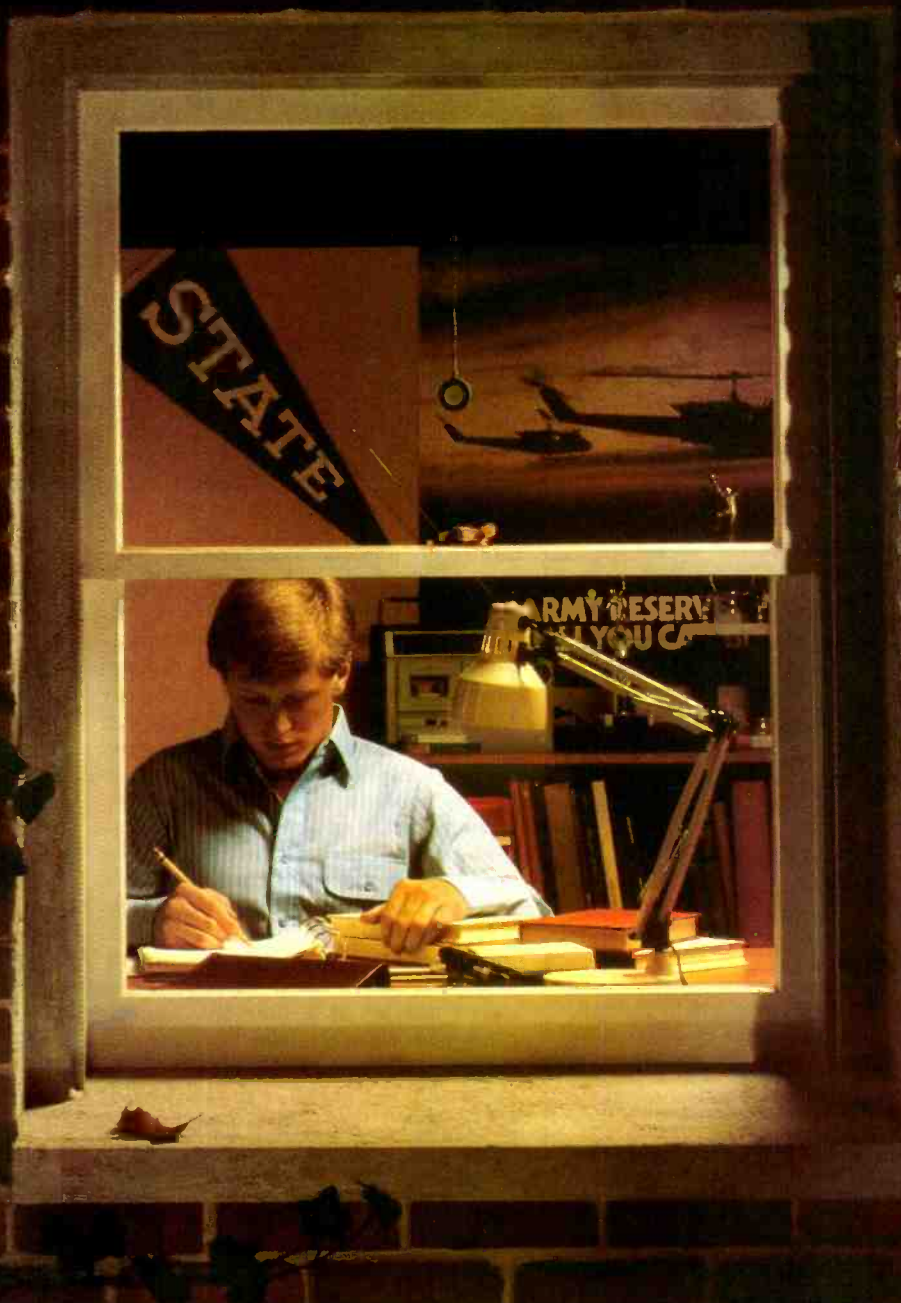
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Agfa's new NXT treatment  
permits the damaged master  
tape to be played back, in  
its entirety, without any  
stops for head cleaning.

remove both steady-state and impulsive noise from master tapes. The speaker was Mary Sauer, vice president of marketing and operations for Sonic Solutions. The company's Noise technique was the subject of a recent feature article in *Audio* ("Putting the Byte on Noise," March).

The seminar's third section covered actual production for release of previously unissued material of less than studio quality by famous recording artists John Lennon and Jimi Hendrix. Dave Klephart, the engineer in charge of both projects, described his preparation of the original materials for mastering. He relied heavily on a Burwen analog noise-reduction unit, especially with the Lennon tapes, and employed considerable equalization. However, Klephart took the position that old recordings are essentially historical documents and must not be processed to approximate contemporary sound. The contrasts in the respective bodies of material were interesting because Hendrix always recorded carefully on top-quality professional equipment, while Lennon tended to regard the tape recorder as a scratch pad and generally showed little concern for quality.

The fourth section was devoted to NXT, Agfa's new method of treating badly damaged master tapes, and this was the principal subject of the confer-

ence. NXT is designed to prevent a common problem which occurs when old masters are copied. Frequently, the oxide layer on the tape will adhere to the playback head to such a degree that the tape itself is virtually destroyed as it is being duplicated. Naturally, as oxides accumulate on the head, the head will lose sensitivity as well, and the recording will be seriously compromised. Previously, the recording engineer had no choice but to rely on a later-generation running master or to treat the master tape with lubricants and stop recording every couple of minutes to clean the heads, thus adding dozens of edits to the process.

NXT treatment permits the damaged master tape to be played back, in its entirety, without stopping for head cleaning. One tape requires about 45 minutes to process and, once processed, the tape should be duplicated within minutes, although theoretically the process does allow a duplication window of up to 16 hours. According to Agfa representatives, NXT itself does not further damage the master tape, but it does not effect a permanent restoration either, since following treatment with NXT, the tape reverts to its previous state. In most cases, however, the tape may be treated with NXT again, and again used for mastering. Three NXT treatments, with three subsequent playbacks, appear to represent the limit of what may be currently accomplished with the process.

NXT is a five-step treatment involving heat and chemicals. It is only suitable for 1/4- to 2-inch audio tapes and is not recommended for video recordings. Agfa is not offering treatment kits to studios but instead has established an in-house facility to perform treatments for participating recording studios. For more information, contact Agfa Corp., 100 Challenger Rd., Ridgely Park, N.J. 07660; (201) 807-2034.

Agfa representatives are making some very big claims for the process. "We haven't met a tape we couldn't play," asserts John Matarazzo of Agfa. Considering the severe age-related deterioration which afflicts some mastering formulations popular in the late '60s, NXT could become indispensable to the rerelease business—if it lives up to its advance publicity. **A**

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# Sphere of

**C**onsidered by many critics to be one of the most creative, odd, colorful, and innovative jazz pianists/composers of our time, Thelonious Sphere Monk, like this massive collection of his recordings, could best be described as a landmark. *The Complete Riverside Recordings* (RCD-02202) presents everything Monk made for Orrin Keepnews' label between 1955 and

(A 22-LP version is also available.) In fact, *The Complete Riverside Recordings* won two Grammys—for Best Historical Album and for Best Album Notes!

The tracks are presented in chronological order, which often differs from the manner in which they were originally released on LP. Some partial and in-studio exchanges are included as well as many fascinating alternate takes. Several of the 14 previously unissued cuts are more exciting than the often-heard versions we are familiar with. Perhaps this is due to their freshness?

It was Thelonious Monk who indirectly dissuaded me from a career in classical piano. I don't recall who first observed that, in jazz, there are no "wrong notes," but it is true that what might be called a wrong note in classical music is, in jazz, merely a stepping stone to a series of other notes which make it perfectly "right." Understanding and practicing this concept convinced me that the constant struggle to achieve slavish fidelity to the notes on a written page was not my cup of tea.

Thelonious Monk epitomized this "wrong note" observation. He sometimes extended it as far as possible, though without venturing into free jazz territory. He was almost like the early 20th-century classical composers who extended tonality to its limits just before serial techniques came in. Yet Monk's piano playing continued the line of succession from Jelly Roll Morton through Duke Ellington. His wonderful, wry, and quirky humor gave a warmth and coherent structure to his music.

While Monk's style was a perfect foil for Rouse's flowing and lyrical sax, other soloists also mixed well with him. Hearing Monk react musically to the different players' approaches makes listening to alternate treatments of the same tunes an engaging activity. The set with Clark Terry, for instance, is a kick because of their similar witty slant.

Keepnews' very readable notes show that Monk was not an easy performer to work with. His personality was just as quirky as his music. Questions about Monk's eccentricities and his eventual complete withdrawal from music remain. Whether these problems were caused by medical or mental illness has never been clear—even Keepnews' exemplary notes shed no light on the subject.

But what matters is the recorded legacy Monk left behind and the fact that his unique



1961. In all, 153 performances are included, from solo piano sessions through his quartet work with the lyric saxist Charlie Rouse to other small ensembles with some of the top jazzmen around—John Coltrane, Sonny Rollins, Coleman Hawkins, Gerry Mulligan, Art Blakey, Clark Terry, and Max Roach. There are 30 different studio sessions, club and concert dates from the U.S. and Europe, and the incredible 1959 Town Hall Big Band concert with arrangements by Hall Overton.

This set is comprised of four multi-CD albums housed in a 12-inch box with detailed LP-size notes, discography, photos, and commentary on the sessions by Keepnews.

*Photographs: David Gahr*

# Influence

John Sunier

music is still being played by performers today. Take note of the perfect marriage of the minds between Monk and Rouse. Their musical give and take, stemming from a decade-long relationship, can still clearly be heard. One writer observed that Monk was the greatest saxophone teacher who ever lived. While he came out of be-bop, Monk's music has a depth and originality that much be-bop lacks.

A few minor quibbles about the CD set, however. It would have been helpful to list the featured soloists and recording locations on the backs of the multi-CD boxes. One has to consult four different places, three of them in the annotated booklet, to learn just what one is hearing. Further, while a true jazz collector might not complain about alternate tracks, my guess is that many would like to hear a varied concert rather than three versions in a row of the same tune, however subtly different from one another. The approach in this set varies from three versions in a row to putting the alternate and the issued versions on completely different CDs, making A/B comparisons difficult. Why not put the alternates of tunes at the end of each CD and insert a cue to stop the player at that point, thus requiring a conscious decision if one wants to hear the alternates? This would not prevent comparing any tracks quickly.

Because Monk's historic association with Riverside Records began in 1955, some of the tracks are mono. The earliest sessions were Monk's trio, so little is lost. However, some of the early Riverside stereo material, such as the *Mulligan Meets Monk* session of 1957, appear only in mono on the CD set! The early black vinyl stereodisc still sounds superb, with the somewhat exaggerated separation of the engineering style of the time, appropriate to the album concept. Also, on most of the stereo tracks, the channels are reversed from the original LPs.

There is a feeling among some purists that no reissue of any old 78 or early tape can possibly sound as good as the original, and those able to do actual comparisons with some of the originals might often agree. However, the general results in this set are commendable. The piano solo material takes on a solid feeling absent from the LP versions, with their subtle speed variations, and the quick, transient "honk" at the beginning of some of Rouse's solos—almost unheard on the LP—now jumps out dramatically. There is a greater frequency extension at both ends of the spectrum, and the earlier material has been cleaned up without losing



any of the music—as with some computer-processed examples.

The major resurrection here is the European material once issued on a double-LP set titled *Two Hours with Thelonious*. This was taped in Paris and Milan by unidentified engineers and purchased by Riverside for release here. The LP sonics were low level, distant, thin, and hissy. The CD versions, however, are like someone turned on the lights.

This set is an important reference work as well as a scrumptious repast for Monk fans, permitting them to dwell, at cosmic length, on one of the true stars of modern jazz. **A**



## GLORY DAYS



**Dreams:** The Allman Brothers Band  
**Polydor 839-417-2**, four CDs; AAD;  
 300:43.

Sound: A Performance: A

It's hard to think of a more archetypically American rock group than the Allman Brothers Band, whose now-legendary history is chronicled in *Dreams*, the latest retrospective collection to emerge from the Polydor/PolyGram vaults.

*Dreams* extends the philosophy behind the Grammy Award-winning Eric Clapton set, *Crossroads* (also produced by Bill Levenson). The aim of this set was to survey the band's artistic evolution from early psychedelic days through classic Southern boogie and on to the various later jazzified and solo permutations. Among the whopping 300-plus minutes of music are nods to the influences of the British guitar bands (covers of The Yardbirds' "Shapes of Things," Cream's version of blues standards like "Spoonful," and Zeppelin's "Morning Dew") as well as illustrations of the band's early attraction to songs of American origin, particularly Southern blues. When The Allman Brothers Band emerged in '69 with twin guitar leads by Duane Allman and Dickey Betts and with Gregg Allman's gravelly blues vocals, they were

doing Blind Willie McTell's "Statesboro Blues."

Beyond the intrinsic interest of the music itself is the use of rare and exotic selections. At least 17 cuts are either obscure or previously unreleased. For example, included are a 1968 cover of Cream's "I Feel Free"; a single by Second Coming featuring Dickey Betts and Berry Oakley before The Allman Brothers Band was formed; a 1966 "Crossroads" by The Allman Joys recently discovered in the family archives; the final Fillmore East song, "Drunken-Hearted Boy," which didn't make the album and features Elvin Bishop; "Whipping Post," presented in a rare quadraphonic mix, and the wonderful acoustic duet, "Little Martha," remixed and featuring Berry Oakley's original bass part, which was omitted from *Eat a Peach*. In addition, there's "Nancy," a cut from an unreleased Dickey Betts solo album.

Sonically speaking, there are some uneven spots in some of the early material, which is to be expected. However, except for quad mixes and remixes of well-known material, the original sound of the masters has been well preserved, and you'll hear the progression in quality through time. Given the scope of this production, you should not be disappointed. *Michael Wright*

(Editor's Note: And now for another view of *Dreams*....)

Let's face it, The Allman Brothers Band was the seminal Southern-rock band. They were the ones who set the ground rules; they were the best. However, the scope of their influence is much narrower than Eric Clapton's, and the very best work they did is concentrated on the two studio albums *Live at the Fillmore East* and the parts of *Eat a Peach* recorded before their astonishing guitarist, Duane Allman, died in a motorcycle crash—just as bassist Berry Oakley did a year later. *Dreams* acknowledges this by emphasizing the early days. Thus, Duane and Berry are present until nearly halfway through disc three.

The first 12 selections are by bands the various members were in prior to the Allmans, and this gives a fascinating historical overview. For a glimpse of how the band gelled, the original demo of the title track is included in close proximity to the eventually released version, recorded just six months later. Other newly released live and studio performances liberally dot the rest of the package. Two of the very best are a live 1979 "In Memory of Elizabeth Reed" and a vintage 1985 Gregg Allman studio take of The Beatles' "Rain," which features a gospel choir backing him.

By the time the final disc rolls around, the material has a whole lot less fire than the early stuff did, but that was the way the band was performing. Still, there is something fascinating about how the story plays itself out. The collection reaches all the way up to the present, as it closes with selections from the most recent Gregg Allman and Dickey Betts albums.

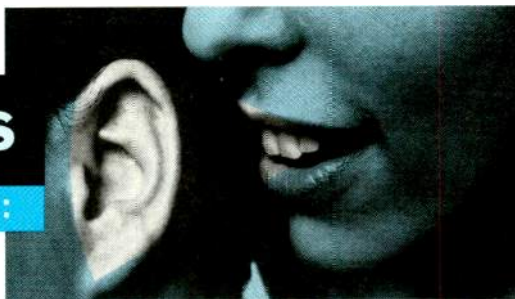
This set also includes a lovely booklet, which features an excellent historical essay by one of the finest rock writers around, John Swenson.

In *Dreams*, Bill Levinson has put together another sterling package. While it may not be as compelling as the Clapton set, that can only be blamed on history—not on the compiler. This really is the ultimate Allman Brothers package. There is far more than can be easily digested, which means that *Dreams* will be most fully appreciated by the fans who play the set again and again. *Michael Tearson*

Photograph: Michael Ochs Archives

# COMPACT DISCLOSURES

December CDs of Note:



On record, no one's been in and out of love more often in the past 25 years than **B A R B R A STREISAND**.

On the other hand, no one's been more consistently successful in sales: Streisand has had 36 certified gold albums, more than any other star. Her latest, "Till I Loved You" (featuring the hit duet with **DON JOHNSON**), is Streisand's first studio album in three years. Including Barbra's inimitable rendition of "All I Ask Of You" from *The Phantom Of The Opera*, "Till I Loved You" is sure to keep love songs (and out-of-love songs) in style for at least another 25 years.



Don't be alarmed: Despite the title, "Everything's Different Now," **'TIL TUESDAY**'s third album builds on all the things you loved

in the group's first two smash hit albums. And of course that includes lead singer/bassist Aimee Mann's ethereal voice and 'Til Tuesday's hauntingly unique sound and unusually powerful lyrics. And in addition to all that, "Everything's Different Now" also includes a song called "The Other End (Of The Telescope)," not to mention 'Til Tuesday's new hit single, "(Believed You Were) Lucky."



The new **BROADWAY BEST VALUE** CDs continue to open to raves. Including the first-time-ever stereo version of **JUDY GARLAND**'s *A Star Is Born*, this is a series selected—and priced—to seduce every Broadway and Hollywood musical addict into rejuvenating their collection. The titles range from rarities like Sondheim's *Anyone Can Whistle* to standards like *My Fair Lady* and *West Side Story*. Now with 46 releases in total, including 17 new releases, the Broadway Best Value Series has something for practically everybody, a good thing to remember with the holidays approaching.



And speaking of the holidays, the **BANGLES** are on their way to becoming as enduring a tradition as silver bells and mistletoe. Now ready to dominate the charts for the third December in a row, the band's latest collection of irresistible four-part harmonies and pop-rock wisdom makes the perfect gift for someone who thinks they have "Everything." Because chances are, they won't have "Everything," which is, of course, the Bangles' new album. Their most mature—and varied—recording yet, "Everything" will appeal to everybody.

**IN AND OUT OF LOVE WITH BARBRA**

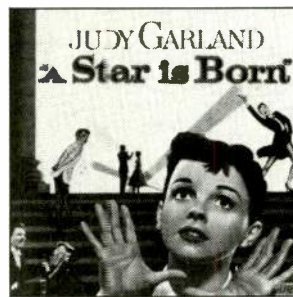
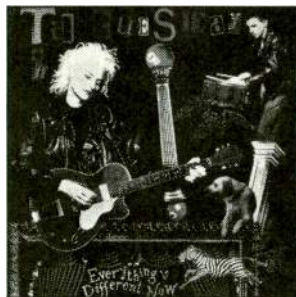
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## Blind Faith

**Mobile Fidelity UDCD-507, CD; AAD; 42:09.**

Sound: B

Performance: B

Mobile Fidelity's latest gold-backed Ultradisc is *Blind Faith*. Upon very careful listening, there is a perceptible difference between this edition and Polydor's regular CD, which is a budget-priced item. Most of it is in Ginger Baker's percussion. The cymbals and percussive effects have significantly more sizzle on the high-priced disc—almost too much more. I had to consciously adjust my ears to the new balance in the sound. Voices, guitars, bass, piano, and organ feel about the same in both versions, but the Ultradisc has a subtle extra depth of image. In short, the Ultradisc does make a difference, but you have to listen to hear it.

This was a hissy-sounding album, on its release in 1969, and that hiss—a part of the master tape—remains on the new edition. Then is it worth three times the price? I'm not so sure.

Michael Tearson

## Roachford

**Epic FE-45097, LP.**

Sound: B+

Performance: A-

Roachford (the group) is the brainchild of Andrew Roachford, who sang, wrote, and played many of the instruments on this album. Comparisons will no doubt be made to Terence Trent D'Arby, another black rock/soul singer out of Great Britain, but Roachford's origins are a bit more eclectic. To these ears, the obvious point of reference is The Gap Band, but one suspects that Roachford will cross over to mass audiences in a way that The Gap Band never did. Andrew is looking to put funk into rock, rather than vice versa. And on a good portion of this record, he accomplishes it.

Judging from the credits, the group went through a bit of a personnel shuffle in the bass and guitar departments during the making of the record, as well as a change of producers in mid-stream. The tracks produced earlier (by Mike Vernon) aren't quite as perky and contemporary as those recorded with Michael Brauer, but the entire album is pretty darn exciting. "Cuddly Toy" and "Shotgun" show off the group's development to good effect, while "Family Man" is likable in an Elton John sort of way. You can easily detect that the group is heading in a very promising direction—particularly if they stay with Brauer, who adds a lot to their approach.

Here's hoping that this album, which already has garnered a following for the group in Britain, gets the attention it deserves in America. These guys are actually doing something musically creative, and that's no mean feat these days.

Jon & Sally Tiven

## Yellow Moon: The Neville Brothers A&M SP-5240, LP.

Sound: B

Performance: A

The words leap out from the album cover and circle around before jarring my mind: "The breakthrough album by New Orleans legends The Neville Brothers." Arrgh!

The utter conceit and foolishness of Vinyland is overwhelming. How, exactly, does a legend have a "breakthrough" album? Isn't it necessary to have a breakthrough album *before* becoming a legend? Of course, what the industry at large—and A&M, specifically—means (i.e., hopes) is that this new release will be a *commercial* breakthrough album.

The Neville Brothers have been writing and recording music for over 30 years and have long had the respect of every musician and listener who understands the roots of American mu-





sic. They have brought us their music as solo performers and as members of different musical groups, including The Meters, The Neville's, and The Wild Tchoupitoulas. One constant, though, has been the second-line rhythms of New Orleans Mardi Gras music—especially that espoused by the New Orleans "Indians" and the late "Big Chief Jolly" (George Landry). Through it all, however, America, on a large scale, hasn't accepted the music which is so uniquely its own.

For years, record companies have felt that the Nevilles produced uneven albums. And, in some respects, this was true. Albums would contain incredibly rhythmic original songs interspersed with tear-jerking ballads done in a '50s, semi-doo-wop style. But the Nevilles and their fans felt this was fine. After all, the songs were all part of the great American musical pasticcio, weren't they? Nonetheless, sometimes artists must do more than just please themselves.

A&M Records had the good sense to sign the Nevilles and then took control of the latest album, *Yellow Moon*. Rather than allowing the Nevilles, or perhaps Allen Toussaint, to produce the album, they sent for engineer/producer Daniel Lanois (U2 and others). Lanois

heeded the call, packed his recording equipment into travel cases, and moved everything into a building in New Orleans, thereby providing the Nevilles with a limited-pressure atmosphere in which to be creative. The result should make even ardent detractors happy.

*Yellow Moon* is a more consistent album than previous Neville releases. There are none of the extreme musical valleys previously found in their works, and yet the high points are still there. This album moves. All the intense rhythms of New Orleans are in the grooves. Furthermore, the songs are lyrically sharp. The lead track, "My Blood," is a call for unity and a lament for those whose blood is being spilled in hellholes such as Haiti and South Africa. Another song, "Sister Rosa," gives thanks to Miss Rosa Parks, whose strong heart and tired feet gave birth to the abolition of the Jim Crow laws.

We still get a chance to hear Aaron and his brothers croon, but this time the songs smoothly meld into the album package. We've got Sam Cooke's "A Change Is Gonna Come" and Bob Dylan's "With God on Our Side." Perhaps the only tune on this album that should have been left in the storage

The Nevilles' *Yellow Moon* is a consistent album with strong and intense rhythms and sharp lyrics.

vault is the traditional "Will the Circle Be Unbroken."

Engineer/producer Lanois has not changed the Neville sound, and, truthfully, there is nothing technically outstanding about this album. Where Lanois et al. seem to have earned their pay is in song selection and album continuity. Only a fool would try to change the group's internal musical dynamics and balance, which have been perfected over the years. Lanois is nobody's fool. He concentrated on the weak points and left good enough alone. The result is a much more marketable album and one of which the Nevilles, as well as new and long-time fans alike, can be equally proud. *Hector G. La Torre*

**In a Sentimental Mood:** Dr. John  
Warner Bros. 25889-2, CD; AAD;  
40:37.

Sound: B

Performance: A

This disc is a *stone gas*! Dr. John's growling vocals and distinctive piano are terrific here. Sounding completely relaxed, the combination of the two is what holds this record together. Dr. John's upbeat attitude also contributes mightily.

On *In a Sentimental Mood*, Dr. John motors his way through a program of nine standards set to a big, brassy, jazzy sound beautifully produced by Tommy LiPuma. There's Cole Porter's "Love for Sale," with a swell David "Fathead" Newman sax solo and Duke Ellington's title track, plus "(I Call My Sugar) Candy," and "More Than You Know"—great love songs, all. For pure wit, there's "Accentuate the Positive," and for pure weirdness, there's "My Buddy." Also included is a delicious duet with Rickie Lee Jones on Eddie



Dr. John

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Jerry Jeff Walker's new album, *Live at Gruene Hall*, features a warm performance and a very fine on-location recording.

Cantor's flagship, "Makin' Whoopee!" and from out in left field, there's a gorgeous cover of the insipid Gerry and The Pacemakers hit "Don't Let the Sun Catch You Crying."

If you like what you hear here, be sure to check out the Rounder-distributed release of Dr. John's first solo piano album, *Dr. John Plays Mac Rebennack* (Clean Cuts CCD-705). For spice, it contains three never-before-available bonus cuts. It is superb, a natural companion to *In a Sentimental Mood*. Technically, it's much cleaner.

Michael Tearson

**Pictures from the Front:** Jon Butcher  
Capitol CDP-90238-1, LP; C2-90238-2, CD; AAD; 43:06.

Sound: B+/A Performance: B

On the surface, there's little to separate Jon Butcher from the pack of killer singer/songwriter/guitarists that are all the rage these days. But if you listen hard and get below the surface, you can distinguish between them—and Butcher will stand out.

The sound of *Pictures from the Front*, co-produced by Spencer Proffer, is that of immaculately crafted, hook-laden album rock. Butcher's singing has a nice edge and carries conviction. His guitar playing is at once smooth, smokin', and tasteful, with nods to Hendrix. He is very talented, like a lot of others, but where Butcher really stands out is in his lyrics. In ironic contrast to what you'd expect with this style of music, teen-love clichés are replaced by a gritty landscape filled with desperate people—the unemployed, junkies, victims of racism—hustling to survive on unkind streets. Butcher isn't really preaching so much as he's observing the darker side of the American dream.

If you like good guitar rock, with the added bonus of sensitive, intelligent lyrics, Jon Butcher's *Pictures from the Front* is worth checking out.

Michael Wright

**Live at Gruene Hall:** Jerry Jeff Walker  
Rykodisc RCD-10123, CD; AAD; 45:14.

Sound: B+ Performance: A

Not long ago, on his home turf in Gruene, Texas, Jerry Jeff Walker recorded one of his very best albums



with this new live set. There are old songs like his own "Little Bird" and Gary White's "Long, Long Time" (best known for Linda Ronstadt's version nearly 20 years ago) and new ones, too. He does them all up real well, with a dandy band that features Lloyd Maines, Champ Hood, and Johnny Gimble on pedal steel guitar, lead guitar, and fiddle. Willie Nelson and co-producer Jim Rooney sing along on a great old Steve Frumholz song called "The Man with the Big Hat (Is Buying)." There are three terrific new songs, by the previously unheralded Chris Wall, which mark him as a name to look for in the future.

The live recording is excellent. The warmth of the performances and the rapport with the audience are captured very well indeed. Editing is effective and unobtrusive. (Editor's Note: We're currently using this album for our initial evaluations of loudspeakers. The music is enough fun that it survives the repetition of this sort of testing, while Jerry Jeff's voice, very well recorded, makes it easy to see which speakers are right and which are wrong.—E.P.)

Jerry Jeff Walker's *Live at Gruene Hall* is an album that will surely wear well over time. It plays natural, easy, and true.

Michael Tearson

**Powerful Stuff:** The Fabulous Thunderbirds

CBS Associated ZK-45094, CD; 43:01.

Sound: B+ Performance: C+

**Rock and Real:** Joe Grushecky and The Houserockers

Rounder CD-9020, CD; ADD; 40:29.

Sound: C Performance: C

**Tied to the Tracks:** Treat Her Right  
RCA 9596-2-R, CD; 46:16.

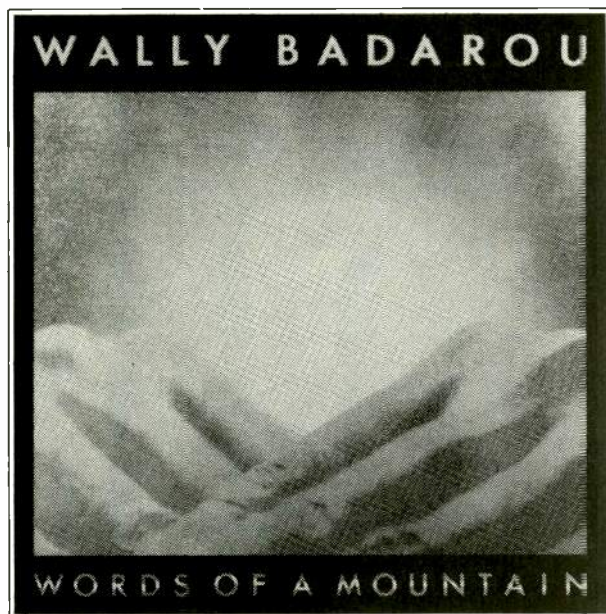
Sound: A— Performance: A

In virtually every town of any size across this great land, you can go out on the weekend and, without too much trouble, find a creditable bar band playing sweaty, rocking rhythm and blues, the kind of stuff the folks at Alligator Records have termed "House-rockin' music." This music is a genuinely American form, and these discs are prime, road-tested examples.

Certainly the best known of these outfits is The Fabulous Thunderbirds from Austin, Texas. A tight little four-piece band, they are powered by Kim Wilson's strong voice and harmonica and Jimmie Vaughan's red-hot guitar over the Fran Christina/Preston Hubbard rhythm section. On *Powerful Stuff*, producer Terry Manning (who also produces George Thorogood, among others) adds some keys and horns to flesh out their sound.

The result is that, while this album is engaging, it is not their best work. The Fab Ts seem to be groping for another "Tuff Enuff," their huge hit of a few years back. Perhaps this search is what left them with the less than great material used here. It is no accident that the band sounds loosest and plays best on the vintage 1961 Slim Harpo oldie "Rainin' in My Heart" and the new "Soul Man"-like Hayes/Porter song "Now Loosen Up Baby." The sound of the album is very good, spare, and lean. Alas, it's a pity that the songs included are pretty lean, too.

Joe Grushecky and The Houserockers first recorded as the Iron City Houserockers in the early '80s. Entering the '90s, they persevere with fine



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spirit. Joe's growling voice suits what he does well, but it is a thinner voice than Kim Wilson's and his range is consequently narrower. The band seems to favor easy-paced middle tempi, which they play real well. But this recording needs more rude, go-for-the-throat abandon and less politeness. Best songs are the title cut, the story song about "The Biddle Mine," and "Memphis Queen," but depth of good material is a weak point here.

Boston's Treat Her Right, named for the old Roy Head hit, serves up a solid set of snaky songs on their second album *Tied to the Tracks*. From the first slide-guitar-driven notes of the opening "Junkyard," these guys radiate authority and wit. Guitarists Mark Sandman and David Champagne (he's the slide player) split songwriting chores, and each comes up with enough goodies for there to be almost an embarrassment of riches in the songs. Surprisingly, Treat Her Right has a sharp taste for the succinct, as only two of the 12 songs go beyond 4:00, and seven are under 3:10. They are also a band that has mastered the difficult art of playing slow. Like Little Feat, the slower they play, the better they play and the funkier they get.

The one cover here is the almost too clever choice of Captain Beefheart's "Nowadays a Woman's Got to Hit a Man." Ironically, the vocals work least well on this song, but the groove is solid and sassy. By the way, the finale, "Back to Sin City," shows that they can rock fast and convincingly, too.

John Mellencamp's producer, Don Gehman, has done a terrific job. The sound is rich and startlingly full, with great presence and excellent stereo range and effects.

*Tied to the Tracks* is a winner!

Michael Tearson



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Julianne Baird and Ronn McFarlane pace their hour of lute song beautifully, full of variety within the minimalist scope.



of our earlier interest in things Spanish. Patriotism, of course, is everywhere—of the good old sort. Here is the Liberty Bell March, with the clanging sound of a metal pipe gong. All in all, British reserve or no, this is a pleasing tribute to a man who increasingly appears as one of our real geniuses in his special area. Nobody, but nobody, writes band marches like Sousa's.

*Edward Tatnall Canby*

**Giovanni Bottesini: Virtuoso Double Bass.** Thomas Martin; Anthony Halstead, piano.

**ASV (Harmonia Mundi) CDDCA-626, CD; DDD; 71:49.**

Signor Bottesini, born 1821, was the hottest double-bass soloist around Europe for a long time—played for kings and queens, and so on. Also, as did almost all virtuosos in the last century, he composed. And arranged. By the looks of a few pictures, he was somewhat of a sideshow himself—a thin man doing zany acrobatics to reach around and over his enormous elephant of a fiddle and make it talk. Surprisingly, though, he is quite a good composer of real Romantic music, full of operatic flourishes amid much sighing and passion (on the bass!) but solidly built nevertheless, with a commendable structure.

Thomas Martin is Bottesini all over again, as far as the playing goes. He makes the big bass beast growl and squeak and sing high tunes with the greatest ease. Mostly it sings in falsetto—i.e., harmonics—or very high up on its highest string. Only once in a while is there a cavernous grunt to shake the walls, reminding us of the real nature of this music machine. You can almost forget it, what with the pleasant tunes and clean harmonic ornamentation.

I have to add that there is a piano, and this pianist is unusual. He is a dramatic powerhouse—enthusiastic, full of rhythm—and in all truth, he carries the recording forward. Not that Martin's bass lags behind, but, let us say, he is able to meet the pianist's verve, tit for tat. With a lesser pianist, it might be different. Kowtows to Anthony Halstead!

The piano, by the way, is curiously hard toned in its louder ranges, a sound that just happens to be highly

appropriate for mid-19th-century music. It blends better with the string sound and also makes for higher drama. I can't find any info on this in the CD package, though.

Oh yes, forgot to mention an interesting bit of programming—a soprano voice for just one item, squarely in the middle of this lengthy CD. It comes just as you think maybe you have had enough of the big bass for a moment. And the soprano, Jacquelyn Fugelle, is good. No brash and sudden interruption; she fits into the mood perfectly, and you are then ready to return to the bass, refreshed. Might be an accident: This material comes from two earlier, separate LPs. But it works, and should be noted. On the long CD span, programming is very important, and a turnoff all too easy.

*Edward Tatnall Canby*

**The English Lute Song.** Julianne Baird, soprano; Ronn McFarlane, lute. **Dorian DOR-90109, CD; DDD; 65:11.**

A splendid example of good programming for CD here. More than an hour's worth of little songs, modest in scope, mostly a minute or two long, yet immensely expressive. And all accompanied by the modest sound of the lute—in fact, two different lutes, alternatively—a sophisticated but equally modest instrument, never loud nor aggressive. Minimalism at its best.

Even well sung and well played, such a program can be deadly in monotony—too much of the same. But there are ways to cope. These performers (and their producer?) are aware. This disc is perhaps primarily for a live audience but, by good luck or intention, also for the CD listener. I began lukewarm. I ended up convinced. It often happens on CD, where you can

work yourself into the music at leisure and at length.

If you are an Elizabethan fan (better, Elizabethan/Jacobean, on into the reign of James I), this is the music you adore. It is the essence of restraint, of underplay. These two performers could not do it better, a very small voice (at least as she sings here) and the small but rich sound of the lute, aristocratic where the guitar is popular. The program is beautifully paced, full of variety within the tiny scope, and every so often, just at the right moment, there's a solo for the lute to give the ear a change. On CD, with a touch of your finger, you may recall any of these 27 little songs instantly.

Never forget that behind these songs' deliberately small expressions lie frightening potencies. It was a rough and dangerous age, full of savagery in the flesh. Which is doubtless the reason why it prized the very opposite in its music and poetry.

*Edward Tatnall Canby*

**Shostakovich: Symphony No. 10; Ballet Suite No. 4.** Scottish National Orchestra, Neeme Järvi.

**Chandos CHAN-8630, CD; DDD; 66:02.**

It takes a certain preference for thick and heavy neo-Romantic music to allow enjoyment of a work like this, which, like so much Shostakovich, is long and . . . should I say, unremitting? I got through, but barely, since I prefer terseness unless there is a very good reason for going on and on. Yes, this is a beautifully constructed work, in its way, and some call it his best symphony, dating from 1953. But it is the first of the all-over (mostly) gloomy works that increasingly characterized his output until his death in 1975. At the same time, it carries on the big, noisy lengths of the monumental wartime symphonies such as the Seventh. So take it or leave it, accordingly.

The Scottish National Orchestra has clearly gone international, with outlander conductors from all over jetting in and nothing Scots-sounding at all. Not a kilt in sight, musically speaking, but a very considerable competence in a world-span way. Chandos, an English label, has got a good thing here.

*Edward Tatnall Canby*

The miracle of Presti and Lagoya was how well they anticipated each other's moves, how balanced their contrasting tone colors.

**Baroque Music for Guitars.** Ida Presti and Alexandre Lagoya.

**Philips 422-285-2, CD; ADD; 71:52.**

Sound: A

Performance: A

Rare moments become even more precious when death cuts them off: Such was the case with Presti/Lagoya, arguably the finest guitar duo in recorded history, which ended with Ida Presti's untimely passing in 1967. Now Philips has digitally remixed and remastered a collection of performances culled from out-of-print albums found here (though rarely) as imports, and released a jam-packed budget CD, *Baroque Guitar*. Don't toss out your LPs, however, since no single album is reproduced in its entirety.

This is distilled sweetness and light, with sublime Sonatas by Domenico Scarlatti, Padre Antonio Soler, Handel, and others and excerpts from Bach's English Suite No. 3 in G Minor. The miracle of Presti/Lagoya was how well they anticipated each other's moves, how balanced the contrasting tonal coloration. Just listen for yourself. Unfortunately, there are no liner notes provided, but that's this release's only flaw. Despite different recording dates (1962, 1963, and 1965), selections are remarkably consistent and noise free. There is some slight, inherent high- and low-end compression, when compared to more modern recordings, but not enough to mar the spine-tingling beauty of Presti and Lagoya's *Baroque Guitar*. *Michael Wright*

**Federico Mompou.** Pierre Huybregts, piano.

**Centaur (Harmonia Mundi) CRC-2055, CD; 74:00.**

This composer is mainly a faint name to most musicians, and not too well known among pianists. The "rep" is vaguely one of expertly written "salon" music, and this proves to me generally true if one includes, say, Chopin in the salon category.

Mompou here shows up as a real miniaturist—the little works, all 25 of them, average a scant three minutes per. Though Spanish born (1893), his "formative years" were spent in Paris, as was much of his later life—until 1941, when he returned, somehow, to Spain. The latest music on this disc

dates from 1921, but do not expect any Stravinsky stuff or jazz idiom! Far from it. Just an interesting increase in dissonance. He has an expert ear, not only for harmony but, shall I say, for disharmony, as per those later years.

The recording has an odd musico-audio aspect, dividing into two very

distinct parts. The first, played on a Hamburg Steinway piano, is devoted to 13 little "Canciones y Danzas," very much turn of the century in sound, though composed over a long span of years. I found them a bit icky—just too, too much—and this is perhaps enhanced by the performance from the

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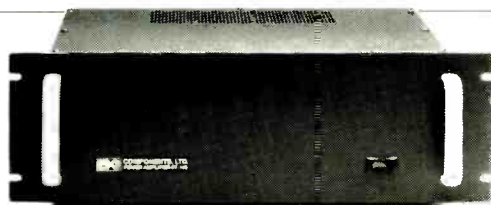
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Mompou's music is smooth, slippery—not inelegant. And his later pieces are more cogent, less dated, than his earlier works.

Belgian pianist. Further, the Steinway somehow has a hard tone in the recording—not too attractive.

Suddenly we shift to the later music, "Fêtes Lointanes" and "Charmes," and to a different piano, Bösendorfer. Wow! My interest suddenly perked up. A much nicer sound on this piano, at least as recorded—a more cogent, less dated idiom in the little works and, somehow, a better projection by the pianist. Don't ask me to explain.

Mompou is often compared to old Erik Satie, the goat-bearded musical gadfly who satirized so much late-Romantic music with his outrageous titles: "Piece in the Form of a Pear," "Skeletons," and plenty more. In Satie, most of the intrigue is in the titles, though his new styling did indeed heavily influence Debussy and the later French, Poulenc. In Mompou, intrigue is very visible to the pianist in the form of strange notations: No bars, seemingly contradictory indications of tempo. This is not evident, of course, to the listener who doesn't have the music to look at, so it is a kind of "in" satire.

Musically, I like Mompou—the Bösendorfer Mompou—a good deal more than Satie, who can be very boring for the ear when he gets obstinate. And even worse for the player. Mompou is more slippery, smoother, not inelegant. A lesser influence on history than Satie, but maybe the better for it.

*Edward Tatnall Canby*

**Fantasies, Ayres, and Dances: Elizabethan and Jacobean Consort Music.** Julian Bream Consort.

**RCA 7801-2-RC**, CD; DDD; 61:01.

Sound: A

Performance: A

England's "Top 40" of 1599 consisted of popular tunes such as John Dowland's "The Frog Galliard," Peter Philips' "Pavin," and Richard Allison's "The Batchelars Delight" and was published in anthologies such as Thomas Morley's *The First Booke of Consort Lessons*. Now this hit parade is recreated by the Julian Bream Consort on *Fantasies, Ayres, and Dances*.

Featuring treble, bass, and tenor viols, Renaissance flute, pandora, cittern, and lutes, Bream's stellar consort includes such early music luminaries as James Tyler and Robert Spencer and steps lively through a set of both

Rockwell Blake's attempt to reconstruct the sound of a Mozart tenor may win him awards, but he could grow and hopefully will.

lighthearted and somber Elizabethan and Jacobean favorites. Several selections feature tenor Robert Tear, the remainder are instrumentals.

Recorded digitally in London's Wigmore Hall, the sound of these delicate instruments is pristine and well balanced. The principal harmonic voices are carried by the ensemble, while Bream's lute plays "divisions" and improvisations in and around the others.

The Julian Bream Consort's *Fantasies, Ayres, and Dances* is performed with a relaxed *joie de vivre* which adds sparkle to these already delightful popular gems from four centuries ago.

Michael Wright

#### **"Victory at Sea" and other favorites.**

Cincinnati Pops Orchestra, Erich Kunzel; William Tritt, piano.

**Telarc CD-80175**, CD; DDD; 61:02.

The "Victory at Sea" music on this CD is a condensed suite of five selections from the score of the immensely popular TV documentary. Many fans of this music will miss much of what they heard on the old RCA recordings of the complete score. However, they will surely appreciate hearing the five familiar pieces in this suite with such brilliant, punchy, exciting sound.

This is a typical Kunzel/Cincinnati Pops recording from Telarc—a big, lush, open sound with plenty of brilliant brass and bluster and great, thumping percussion. All of it super-charged and highly dynamic.

Bert Whyte

**The Mozart Tenor.** London Symphony Orchestra, Nicholas McGegan; Rockwell Blake, tenor.

**Arabesque Z-6598**, CD; 46:44.

Yes, I know. This pleasant-looking young tenor has made a fabulous rep already as "The Rossini Tenor." Critical acclaim, as they say, by the bushel and all sorts of awards. Okay, so now he becomes "The Mozart Tenor"—if rather at short length (a very short CD).

Let me observe that nobody, but nobody, has ever heard the sound of an actual Mozart tenor. That was far back in prehistory, sonically speaking. We try to imagine, to reconstruct, the sort of tenor we think might have sung the notes that are still extant on paper. Lots of us have strong ideas on this

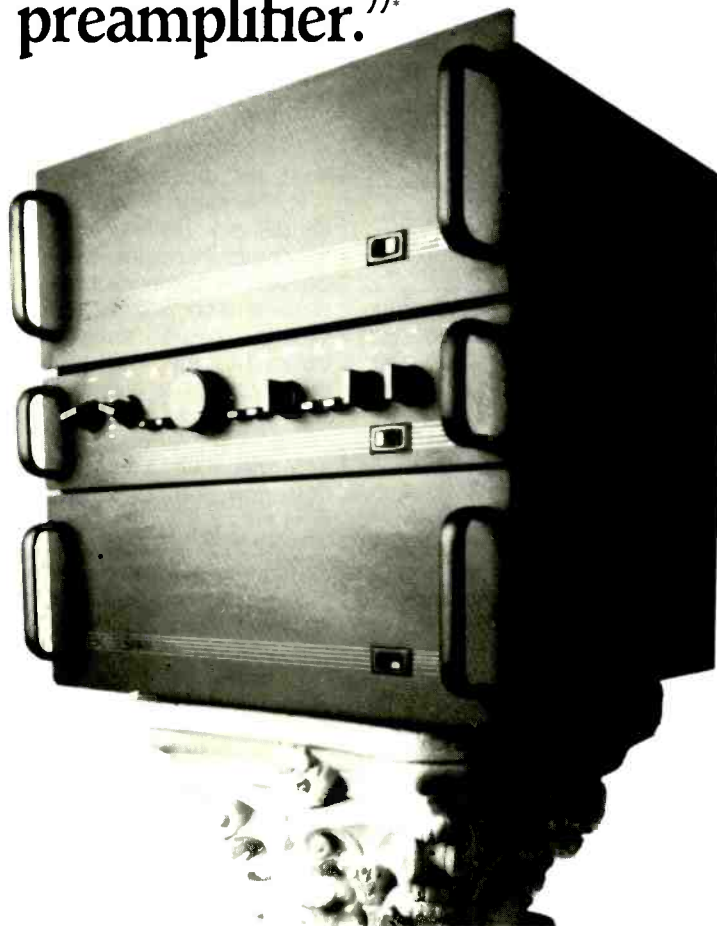
point, including many a tenor himself. Also lots of listeners, who must pick and choose among availabilities.

So—dare I say it?—I was intrigued and looked forward to this record even before it arrived. I played a part of the first piece on it and, sadly, found no reason to go on.

Yes, I know. More awards, surely. Is everybody out of step but me? A minority will surely agree with me, but this review is for those who suspect they would go along. Even so, Blake could grow and hopefully will! I'll be trying him again. As "they" say, he's doing his thing.

Edward Tatnall Canby

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## MARSALIS ARTS



**The Majesty of the Blues:** Wynton Marsalis  
CBS CK-45091, CD.

Sound: A Performance: B+

**Trio Jeepy:** Branford Marsalis  
CBS CK-44199, CD; CX2-44199, LP.

Sound: A/A- Performance: A

The Marsalis brothers are at it again, each involved with a multi-tiered jazz work, each expressing himself differently, taking different routes, yet arriving at or near the same place—traditionally and artistically speaking.

Wynton has put forth, in Ellington-like fashion, a complex, expressive, blues-drenched suite centered on his home town, New Orleans. Replete with marches, sermon, and parade, this CD first strips the idiom to the bone, in "The Majesty of the Blues (The Puheeman Strut)," then examines the sub-genre thoroughly, in "Hickory Dickory Dock." Through a catharsis ("The Death of Jazz"), Marsalis' sextet cleanses and dresses the wound, in "Premature Autopsies (Sermon)," thus allowing the healing process to take place and the celebration to begin: "Oh, But on the Third Day (Happy Feet Blues)."

There are a great many titillating, provocative, and introspective passages here. Wynton has a point to make and makes a worthwhile statement about the blues' and jazz's impact on, and place in, American music. On *Majesty*, Wynton surrounds himself with some young but thoroughly schooled musi-

cians: His favorite pianist and cohort, the talented Marcus Roberts, tenor and soprano saxophonist Todd Williams, altoist Wes Anderson, bassist Reginald Veal, and drummer Herlin Riley.

Furthermore, Wynton has matured in his delivery. He is only now beginning to comprehend his ability. Marsalis possesses immense but much unharassed and still-developing talent. With the media's runaway, overly laudatory barrage, journalists have done this jazz star a disservice, foisting a heavy—and as yet somewhat undeserved—mantel upon him. To be fair, let's check him out 10, 15, or 20 years from now and see what kind of numbers he's put on the board.

Wynton is *learning* to be great. This is encouraging and makes *Majesty* that much more enjoyable. It is not by accident, nor even design, but out of genuine tribute that Marsalis offers a spot on the session to acknowledged elder statesmen—clarinetist Michael White, trombonist Freddy Lonzo, and Danny Barker on banjo—each of whom treats the all-Marsalis material specially, adding the called-for innate, Crescent City feel. Armstrong comes alive during "Death"; Jelly Roll Morton is omni-present on "Happy Feet," and one senses Sidney Bechet's presence throughout.

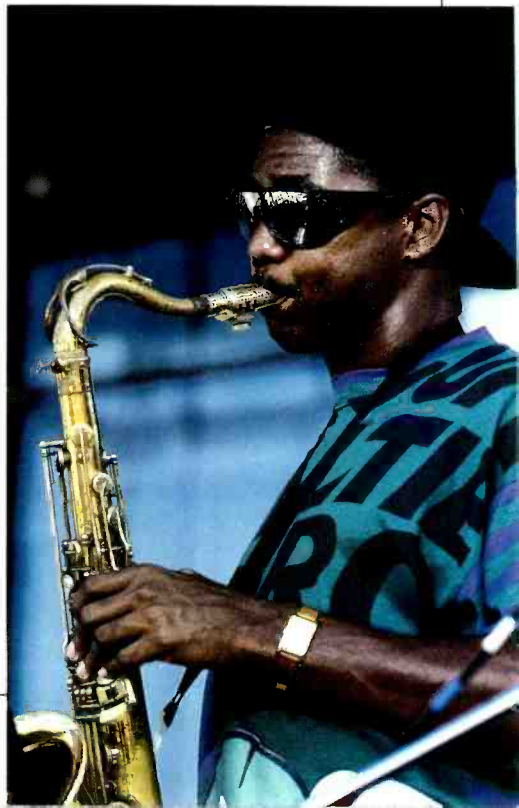
Ultimately, *Majesty* must be thought of as a rhythmic experiment. Mostly it succeeds, reminding us not only of those Wynton would like to remind us of (Satchmo, Bechet, Bird, Monk, Trane, Ornette and, more than any-

one, Ellington) but also modernists such as trumpeter Lester Bowie, who has woven tradition throughout his Brass Fantasy work, and keyboardist Carla Bley.

Aside from the heavy-handed, predominantly unaccompanied 16-minute oratory, *Majesty* accomplishes what it sets out to do: Offer us a blues primer.

Meanwhile, brother Branford's energetic and exhaustive double-LP/CD delight, *Trio Jeepy*, ranks as one of the year's most important releases. Like Wynton, Branford shows great deference to those who preceded him. Song selection ranges from Hoagy Carmichael's "Stardust" (oddly enough, as the bonus track, it's heard on the LP only) and "The Nearness of You," to Billy Strayhorn's "UMMG," to Ornette Coleman's "Peace," to present-day originals.

In fact, it is the Saxophone Colossus who most comes to mind here. As with Sonny Rollins, Branford's warmth, softness, and easy-going nature, working in tandem with his hard-edged, uncompromising musical attitude, will earn him a deserved spot in jazz history. It is no accident that Branford not only covers Rollins' "Doxy" here but, as the senior saxophonist did some 32 years earlier, also sets up this album in a pianoless trio format. He is joined in



Photographs: ©David Gahr

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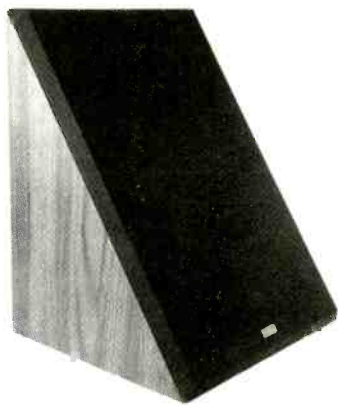


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*The Divine Sarah Vaughan*  
is an incredible sampling  
of her formative years.  
It shows why, even then,  
she was a legend.

this effort by the youthful, exuberant Jeff "Tain" Watts on drums, the ageless (79) bassist/photo-documentarian Milt Hinton, and on "Doxy," "Peace," and "Random Abstract (Tain's Rampage)," bassist Delbert Felix, who replaces Hinton.

"You have to be precocious to be sure," Rollins said about his pianoless setting on his own "Freedom Suite." "The challenge in that kind of playing [without a keyboard] is extended when you are doing it just with trio. . . . You have to make sure it doesn't get monotonous, just being three instruments. The plus side of it is that you have more freedom—if you are willing to deal with it."

Indeed, Branford represents a primary modern-day voice. However, like his brother Wynton, he has absorbed and learned a lot from those who precede him. The trio's original "Gutbucket Steepy," a slow, slow blues, reeks of the Southwest—of Arnett Cobb and Budd Johnson. And you know Hinton is magical on such arrangements. "Stardust" brings Prez back to life; Strayhorn's "UMMG" is Coltrane and Mobleyesque, as is "Makin' Whoopie (Reprise)." (There's a brief 40-second version of this number followed later by an 8-minute rendition.)

If there was any doubt about Branford Marsalis' ability, sense of history, and dedication to the art of jazz and saxophone, *Trio Jeepy* should lay it to rest. This is a magnificent endeavor.

Jon W. Poses

**The Divine Sarah Vaughan—The Columbia Years, 1949-1953**

Columbia C2K-44165, two CDs; 43:44 and 39:57.

Sound: B +

Performance: B +

This incredible two-volume Compact Disc set encompasses Sarah Vaughan's formative years when, as a 25-year-old stylist, she was making the transition from nightclub performer to major concert attraction. *The Divine Sarah Vaughan* represents approximately half the body of her Columbia work; given the quality of some of the songs of the period, the remainder is probably best forgotten. This release highlights an early chapter in a prodigious recording career and reveals why, even then, she was a legend.



Sarah Vaughan's style was considered a startling innovation, unlike anything her predecessors had been doing. She approaches a song as an instrumentalist might, using her skill as an accomplished musician to improvise with assured daring. Her vocal technique displays an innate sense of timing and control and, at her best, an impeccable clarity of diction. Few vocalists possess her dynamic range, which extends a full two octaves comfortably. There is an operatic tone to the upper register of her rich contralto tessitura, which she employs sometimes for effect.

All this is apparent on the 28 songs in this package. Many of them will be familiar, and, indeed, Vaughan has recorded some of them more than once over the years ("I Cried for You," "Mean to Me," "Summertime," and "Perdido" come to mind). While the orchestrations occasionally show their age—as do the limitations of the original technology—Sarah Vaughan's voice, then, as now, is a revelation. Listen to the eight sides Vaughan cut on two dates in May 1950 with then-husband George Treadwell's All-Stars. The group included a trumpeter who had created a sensation the year before, with the release of *The Birth of the Cool*. His name: Miles Davis.

Several of the transfers exhibit noise, as transcriptions from glass matrixes were sometimes used. But overall, engineer Mark Wilder has done an excellent job with the digital restoration, and the sonics are unimpaired.

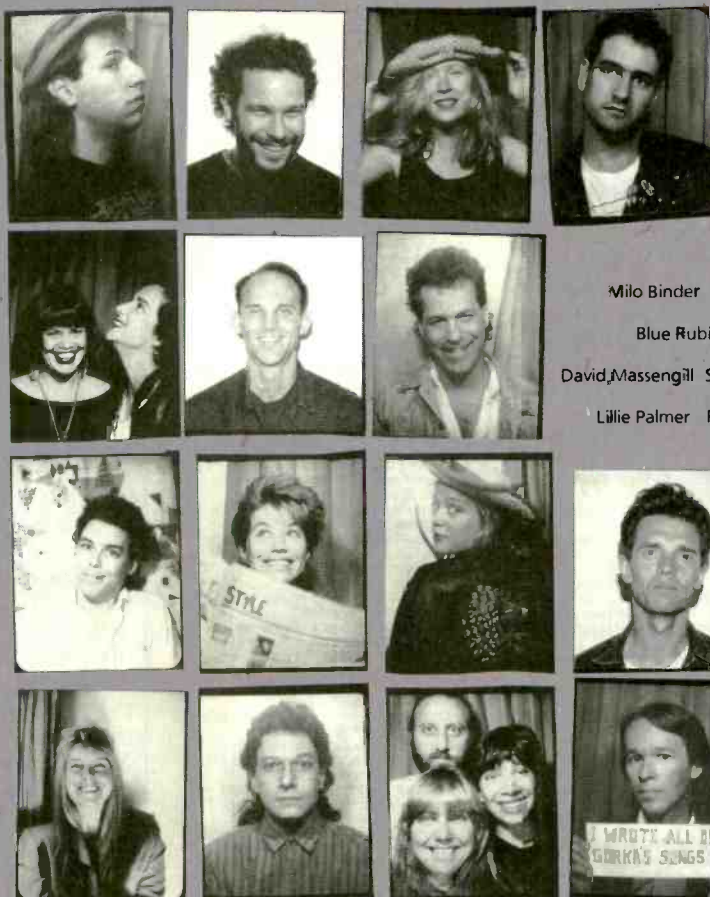
*The Divine Sarah Vaughan—The Columbia Years, 1949-1953* is a welcome addition to the CD library of admirers

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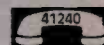
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**AR Fayetteville/Ft. Smith:** Stereo One • **Little Rock:** Leisure Electronics • **Searcy:** Softmark  
**AZ Phoenix/Mesa:** Hi Fi Sales • **Tucson:** Audio Emporium • **Yuma:** Warehouse Stereo  
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**DE Wilmington:** Bryn Mawr Stereo  
**FL Daytona Beach:** Stereotypes • **Ft. Myers:** Stereo Garage • **Ft. Lauderdale:** Sound Advice • **Ft. Pierce:** Sound Shack • **Ft. Walton Beach:** Audio International • **Gainesville:** Electronics World • **Jacksonville:** Audio Tech • **Spectrum Home Theater:** Key West • **Audio International:** Lakeland • **Sound Factory:** Mary Esther • **Palm Audio:** Merritt Island • **Southern Audio:** Miami • **Electronic Equipment Co., Sound Advice:** Naples • **Stereo Garage:** Panama City • **Watsound Stereo:** Pensacola • **All Pro Sound:** Sunrise • **Sound Advice:** St. Petersburg • **Cooper for Stereo:** Sound Advice • **Tallahassee:** Stereo Store • **Tampa:** Sound Advice • **W. Palm Beach:** Electronic Connection • **Sound Advice**  
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**HI Honolulu:** Honolulu Audio Video  
**IA Davenport:** Grigg's Music • **Des Moines:** Audio Labs • **Dodge City:** Sound World • **Dubuque:** Remiers Iowa City • **Hawkeye Audio:** Mason City • **Sound World:** Sioux City • **Audio Visions:** Waterloo • **Team**  
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**MS - Hattisburg:** McLellan TV • **Jackson:** Hooper's • **Pascagoula:** Empress  
**MT Billings:** Video Sale & Sound Bozeman • **Thirsty Art:** Great Falls: Rocky Mountain Hi Fi • **Kalispell:** Audio Visions • **Missoula:** Aspen Sound  
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**ND Bismarck:** Pacific Sound • **Fargo:** Today Electronics  
**NE Kearney:** Midwest Audio • **Lincoln:** Stereo West • **Omaha:** Stereo West • **York:** Midwest Audio  
**NH Concord:** Audio of New England • **Laconia:** Lakeside Stereo • **North Hampton:** The New Audiophile • **Salem:** Cuomo's  
**NJ East Brunswick:** Atlantic Stereo • **Maple Shade:** Bryn Mawr Stereo • **Montclair:** Perdue Radio • **Paramus:** Harvey Electronics • **Raritan:** AC Audio • **Riverwood:** Sound Board • **Shrewsbury:** Monmouth Stereo • **Toms River:** Radio Camera • **Wall Twp.:** Monmouth Stereo • **West Caldwell:** Perdue Radio  
**NM Alamogordo:** D&K Electronics • **Albuquerque:** West Coast Sound • **Carlsbad:** Beason's • **Clovis:** Towne Crier • **Santa Fe:** West Coast Sound  
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**NY Albany:** Clark Music, Sounds Great • **Amherst:** Speaker Shop • **Batavia:** Unicorn Audio • **Buffalo:** Speaker Shop • **Corning:** Chemung • **Elmira:** Chemung • **Fredonia:** Studio One • **Glens Falls:** Audio Genesis • **Goshen:** Longplayer's Stereo • **Ithaca:** Chemung, Sound Image • **Jamestown:** Studio One • **Manhasset:** Audio Breakthroughs • **Massena:** Hi Fi Shop • **Newburgh:** Audio Expressions • **New Hartford:** Adirondack Music • **New York City:** Audio Breakthroughs, Electronic Workshop, Harvey Electronics • **Plattsburgh:** Alpha Stereo • **Rochester:** JB Sound • **Scarsdale:** Listening Room • **Syracuse:** Clark Music • **Vestal:** Hart Electronics • **White Plains:** Harvey Electronics • **Woodbury:** Audio Breakthroughs

**OH Akron:** Audio Craft • **Canton:** Belden Audio • **Cleveland & Suburbs:** Audio Craft • **Cincinnati:** Stereo Lab • **Columbus:** Stereo Lab • **Dayton:** Stereo Showcase • **Findlay:** Audio Craft • **Lima:** Classic Stereo • **Toledo:** Audio Craft  
**OK Lawton:** Hi Fi Shop • **Oklahoma City:** Audio Dimensions • **Shawnee:** Rave Sounds • **Stillwater:** Carlines • **Tulsa:** Audio Advice  
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**PA Allentown:** Bryn Mawr Stereo • **Blakely:** Hart Electronics • **Bryn Mawr:** Bryn Mawr Stereo • **Camp Hill:** Bryn Mawr Stereo • **Chambersburg:** Sunrise Electronics • **Erle:** Studio One • **Harrisburg:** Bryn Mawr Stereo • **Johnstown:** Gary's Entertainment • **Kingsport:** Hart Electronics • **Lancaster:** G.N.T. Stereo • **Longhorne:** Bryn Mawr • **Montgomeryville:** Bryn Mawr Stereo • **Natrona Heights:** Stereo Land • **Philadelphia & Suburbs:** Bryn Mawr Stereo • **Pittsburgh:** Audio Junction • **Quakertown:** Bryn Mawr Stereo • **Reading:** G.N.T. Stereo • **Selinsgrove:** Stereo Shoppe • **State College:** Paul & Tony's Stereo • **Stroudsburg:** Main St. Stereo • **Wexford:** Audio Insight • **Williamport:** Robert M. Sides  
**PUERTO RICO Rio Piedras:** Precision Audio  
**RI W. Providence:** Eastern Audio  
**SC Anderson:** Music Machine • **Charleston:** Audio Warehouse • **Columbia:** Music Machine • **Greenville:** Music Machine • **Greenwood:** Stereo Shop • **Spartanburg:** Stereo Shop  
**SD Aberdeen:** Engel Music • **Rapid City:** Team Electronics • **Sioux Falls:** Audio King  
**TN Chattanooga:** R&R TV • **Cookeville:** Lindsey Ward • **Jackson:** New Wave Electronics • **Kingsport:** Audition • **Knoxville:** Lindsey Ward • **McMinnville:** Lindsey Ward • **Memphis:** New Wave Electronics • **Nashville:** Hi Fi Buys  
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**VT Brattleboro:** Scientific Stereo • **Essex Junction:** Creative Sound • **Rutland:** Mountain Music  
**WA Bellingham:** QC Stereo • **Chelan:** Music Stars • **Oak Harbor:** QC Stereo • **Chelan:** Seattle/Bellvue/Lynnwood: Magnolia • **Spokane:** Eclair (H&S) • **Tacoma:** Magnolia  
**WI Appleton:** Sound World • **Eau Claire:** EME Audio Systems • **Green Bay:** Sound World • **Lacrosse:** Sound World • **Madison:** Happy Medium • **Marinette:** Sound Seller • **Milwaukee:** Audio Emporium • **Oshkosh:** Audio Plus • **Wausau:** Sound World  
**WV Barboursville:** Beckley, Charleston: Pied Piper • **Clarksburg:** Audio Visual Concepts • **Huntington:** Pied Piper, Video Warehouse • **Piedmont:** Sound Gallery • **Sheelings:** Stereo Lab  
**WY Cheyenne:** Electronic Unlimited • **Gillette:** Sheridan: Star Video Library

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To The Ordinaires, all is possible, and anything goes with anything else, but only if you have the right taste.

of the singer and the period alike. True Sarah Vaughan aficionados might care to know that her earlier recordings, for Musicraft, are now available on CD, as is the terrific-value *Sassy Swings the Tivoli* double CD on Mercury.

Michael Aldred

**One:** The Ordinaires  
**Restless/Bar-None Records 72615-2,**  
CD; AAD; 43:40.

Sound: A – Performance: A –

The Ordinaires look at music genres and categories the way a nouvelle-cuisine chef looks at food ingredients. Anything is possible, anything goes with anything else—but only if you have the right taste. With their long-overdue second album, ironically entitled *One*, they charge through 10 compositions that begin with an Ornette Coleman frenzy of tortuous rhythms and free blowing and close with a cover of Led Zeppelin's "Kashmir."

A new-music big band that combines a rock rhythm section and guitars with violins, cellos, and saxophones, The Ordinaires move freely from complex, intricate arrangements to free-jazz saxophone blowing, swinging horn sections, and screaming electric guitar. *One* abounds with quotes and references: Jimi Hendrix's opening to "Manic Depression" forms the basis of "Racing Thoughts," and the whimsy of Erik Satie can be heard in "The Dance of the Coco Crispies."

I cite these references and name these names, but it doesn't quite do justice to The Ordinaires kinetic amalgamation. They make a joyous celebration of music that is both passionate and powerful, intelligent and fun. It's an apparently egoless band of virtuosos.

The Ordinaires keep this unusual mix precisely etched with crisp recording from New York's leading new music engineer, Martin Bisi, who maintains the electric crunch of the group without sacrificing the details.

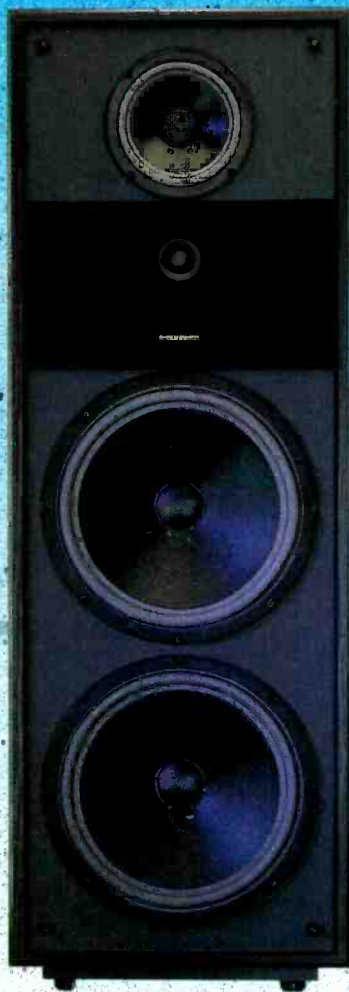
As guitarist Robert Fripp once said of his perception of King Crimson, "If only it had the feel of Hendrix, 'if only' the vocabulary was more sophisticated, and if only Bartók was on guitar with a Marshall stack turned up to 11." Add in some Ornette Coleman and a bit of burlesque, and you've got The Ordinaires.

John Diliberto





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Dual Source  
Concept*







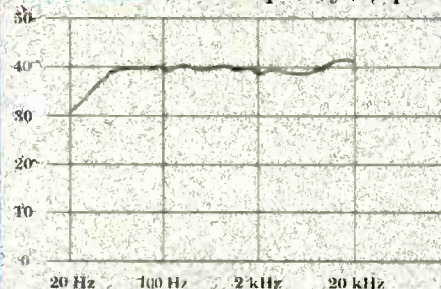
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## Dual Source

MODEL DS 1212 Frequency Response



**DS 1010**  
dual 10" bass reflex system



**DS 1212**  
dual 12" bass  
reflex system



**DS 88**  
8" bass reflex system



**DS 66**  
6 1/2" bass  
reflex system



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**Dual Source Bass.** Each DS model uses two low frequency transducers to reproduce the lowest bass frequencies. This means each model outperforms its competitors in the area of both low and high level bass clarity. **Improved bass accuracy and greater clarity at all volume levels.**

**Dynamic Symmetric Ports.** All DS models use two bass reflex ports at the rear of their enclosures. Each port has a symmetric aperture at both ends. This allows high velocity bass power to be delivered into the listening room with **near zero noise and distortion.**

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#### **Driver Synchronized Midrange.**

The midrange driver is above the tweeter in all DS models to optimize the time domain response in the critical midrange frequencies. This inverted positioning provides **remarkable improvements in sound imaging and clarity** keeping the arrival times synchronized.

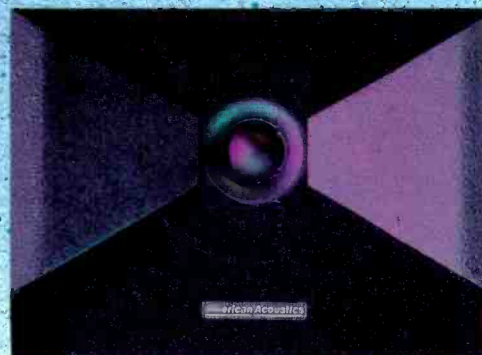
**Density Stabilized Diaphragm Material.** All DS models feature a new hybrid diaphragm material available exclusively from American Acoustics. This density stabilized composite material combines organic and polypropylene fibers to form a transducer diaphragm with unique properties. The diaphragms are further stabilized with a fluid polymer treatment which assures **long-term performance uniformity.**

#### **Discrete Spectrum Crossovers.**

The crossovers in all DS models provide several unique performance benefits. The DS 66 and DS 88 use a combination of a progressive midrange crossover and a high-slope treble crossover to achieve **distinct and clear spectral separation** between transducers. The DS 1010 and DS 1212 employ high-slope bass to midrange crossovers which allow the use of dual bass transducers and ear level midrange transducers. This provides a **distortion-free frequency transition** which results in impressive bass performance and extremely clear midrange reproduction.



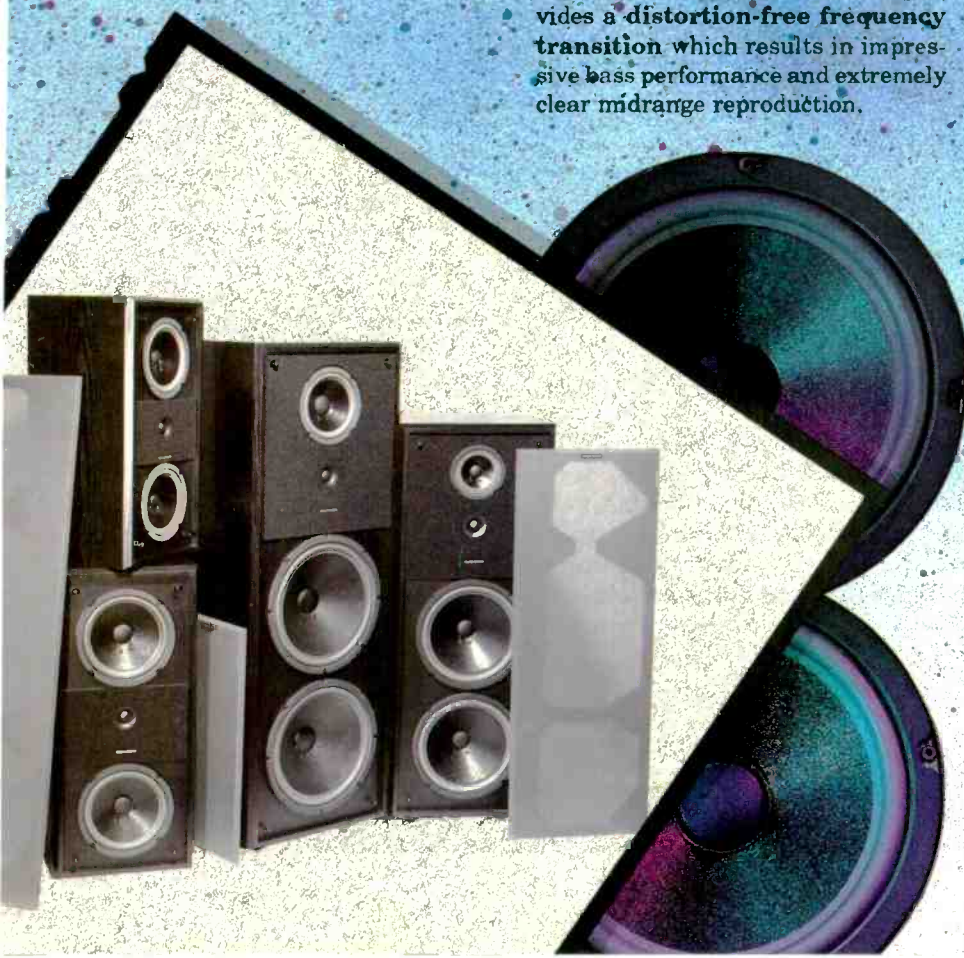
**American<sup>®</sup>  
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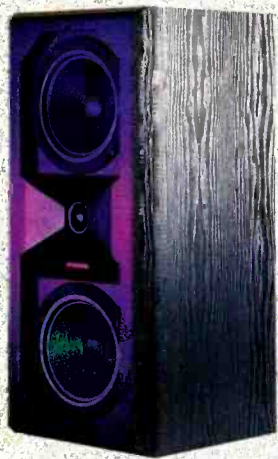
The superior sonic reproduction of today's recorded music required a "no-compromise" approach by American Acoustics' development engineers. It meant new thinking... new technology.

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*Dual Source*

| Model          | DS 66  | DS 88  | DS 1010  | DS 1212  |
|----------------|--|--|--|--|
| System Type    | bass reflex  | bass reflex  | bass reflex                                    | bass reflex                                      |
| Woofer         | (2) 6 1/2", 1" voice coil  | (2) 8", 1 1/2" voice coil  | (2) 10", 1 1/2" voice coil                     | (2) 12", 2" voice coil                           |
| Midrange       |  |  | 5" sealed w/ferrofluid,<br>1" voice coil       | 6 1/2" sealed w/ferrofluid,<br>1 1/2" voice coil |
| Tweeter        | 1" soft dome   | 1" soft dome   | 1" soft dome                                   | 1" soft dome                                     |
| Crossover      | woofer to woofer/mid,<br>550Hz; woofer/mid to<br>tweeter, 3500Hz | woofer to woofer/mid,<br>400Hz; woofer/mid to<br>tweeter, 1.8kHz | woofer to mid, 650Hz<br>mid to tweeter, 3.7kHz | woofer to mid, 350Hz<br>mid to tweeter, 2.8kHz   |
| Freq. Response | 42Hz - 22kHz   | 38Hz - 22kHz   | 34Hz - 22kHz                                   | 29Hz - 22kHz                                     |
| Sensitivity    | 93dB   | 93dB   | 94dB   | 95dB   |
| Nom. Impedance | 4 ohms   | 4 ohms   | 4 ohms   | 4 ohms   |
| Power Handling | 85 watts RMS/170 W peak  | 125 watts RMS/<br>250 W peak                                     | 200 watts RMS/<br>400 W peak                   | 275 watts RMS/<br>550 W peak                     |
| Height         | 21 1/2"  | 26 1/4"  | 37 1/4"  | 44"  |
| Width          | 10 1/2"  | 12"  | 14"  | 15 1/2"  |
| Depth          | 10 7/8"  | 12 7/8"  | 14 7/8"  | 17 7/8"  |

Specifications and product subject to change without notice.

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## SPECTRAL DMC-20

### A New Reference Preamplifier for the Coming Decade



Advances in analog and digital source components are redefining the role of the preamplifier in today's consummate music system. The Spectral DMC-20 Reference Preamplifier dramatically defines this new role, setting performance standards for the 1990s.

With unprecedented flexibility and control features, the DMC-20 establishes a benchmark in preamplifier design. Spectral's innovative architecture provides seven audio sources, phase switching, and full tape facilities, surpassing the finest purist preamp in sonic performance.

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New breakthroughs in signal linearity are achieved in the DMC-20. Advanced design techniques produce the fastest signal response known in the audio industry. The result is superb musical coherence and transparency.

In the DMC-20 Reference Preamplifier, timeless qualities of care and craftsmanship join Spectral's flawless engineering to promise a lifetime of music enjoyment.





# 32<sup>nd</sup> ANNUAL EQUIPMENT DIRECTORY

Photograph: ©1989, Bill Ashe

## CD PLAYERS & D/A CONVERTERS

| MANUFACTURER          | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional |   | Disc Capacity | Decoding System:<br>Number of Bits—Oversampling Rate |          |        |                     | Digital Filteration: Analog Phase Digital = A,<br>Digital Only = B, Analog Only = C | Line Outputs: Fixed = F, Var. = V, Balanced Analog = B,<br>Other Outputs: Headphone = H,<br>Headphone with Level Control = HL,<br>Subcode Only = S, Digital = D, Fiber Optic = F | Frequency Response, Hz to kHz, ± dB | S/N Ratio, "A" Wtd., ± dB | THD, % | Elapsed Time Display, From Disc Start = D,<br>From Track Start = T, Both = B | Repeat/Time Display To Disc End = D,<br>To Track End = T, Both = B | Number of Programmable Selections | Repeat Functions: Entire Disc = D, Track = T,<br>A-B Phrase = P, Entire Program = E           | Weight, Lbs.                             | Price, \$ | Notes |
|-----------------------|--|---|---------------|--|----------|--------|---------------------|---|--|-------------------------------------|---------------------------|--------|--|--|-----------------------------------|---|--|-----------|-------|
|                       |  |   |               |  |          |        |                     |   |  |                                     |                           |        |  |  |                                   |   |  |           |       |
| ACCUPHASE             | DP80L/DC81L(RI)  | 1 | 20-8X         | A  | F/V<br>B | D      | 4-20 ± 0.3          | 120   | .0016  | D                                   | D                         | 30     | D/T  | 90   | 13,000.                           | Digital signal processing for volume and de-emphasis.   |  |           |       |
|                       | DP70(RI)   | 1 | 16-4X         | A  | F/V<br>B | D      | 4-20 ± 0.3          | 115   | 0.002  | D                                   | D                         | 30     | D/T  | 58   | 7600.00                           |   |  |           |       |
| AOCOM                 | GCD-575(RI)  | 1 | 16-4X         | A  | F/V      | HL/D   | 5-20<br>+ 0.1, -0.5 | 105   | .0025  | B                                   | B                         | 24     | D/T/P/E  | 12   | 599.95                            |   |  |           |       |
| A/O/S/                | CD4(RO)  | 1 | 16-2X         | A  | F        | H      | 20-20 ± 0.25        | 102   | 0.01   | B                                   | B                         | 16     | D/T/P/E  | 22   | 850.00                            |   |  |           |       |
| AIWA                  | XC-005(RI)   | 1 | 18-8X         | A  | F/B      | HL/D/F | 4-20 ± 0.3          | 110   | .0025  | T                                   | B                         | 30     | D/T/P  | 11.5   | 500.00                            |   |  |           |       |
|                       | XC-004(RI)   | 1 | 18-4X         | C  | F        | HL     | 20-20 ± 0.5         | 105   | 0.004  | T                                   | D                         | 20     | D/T/P  | 10.6   | 400.00                            |   |  |           |       |
|                       | XC-002(RI)   | 1 | 16-4X         | C  | F        | H      | 20-20 ± 0.5         | 100   | 0.004  | T                                   | D                         | 20     | D/T/P  | 10.4   | 280.00                            |   |  |           |       |
| ANALOGIC DESIGN GROUP | NXa FET Hybrid(RI)   | 1 | 16-4X         | A  | F        | H      | 5-20 ± 0.8          | 99  | 0.01   | T                                   |                           | 20     | D/T  | 11   | 1095.00                           | FET hybrid analog stage.  |  |           |       |
|                       | NXa Tube Hybrid(RI)  | 1 | 16-4X         | A  | F        | H      | 5-20 ± 1            | 97  | 0.04   | T                                   |                           | 20     | D/T  | 14   | 1495.00                           | Tube hybrid analog stage.   |  |           |       |
|                       | Vertex(RI)   | 1 | 16-4X         | A  | F        |        | 5-20 ± 0.6          | 102   | 0.02   | T                                   |                           | 20     | D/T  | 23   | 2495.00                           | Separate chassis for digital and analog sections.   |  |           |       |
|                       | Adapt  |   | 16-8X         | A  | F/V      |        | 4-20 ± 0.5          | 101   | 0.03   |                                     |                           |        |  | †  | †                                 | D/A converter. †FET version, 11 pounds, \$1349.00; tube hybrid version, 18 pounds, \$1949.00. |  |           |       |
| ANALOG RESEARCH       | Segue(RI)  | 1 | 16-4X         | A  | F        | H      | 20-20 + 0, -1       | 110   | 0.01   | T                                   |                           | 22     | D/T/E  | 10   | 800.00                            |   |  |           |       |
|                       | Legato(RI)   | 1 | 16-4X         | A  | F        | H      | 20-20 + 0, -1       | 107   | 0.01   | T                                   |                           | 22     | D/T/E  | 10   | 1100.00                           |   |  |           |       |
| AR                    | CD-06(RI)  | 1 | 16-4X         | A  | F/V      | D      | 4-20 ± 0.5          | 105   | 0.007  | B                                   | B                         | 20     | D/T/P/E  | 15   | 700.00                            | Remote has volume control.  |  |           |       |
| ARAGON                | D2A  |   | 18-8X         |  | F        | D/F    | 2-20 ± 0.3          | 110   | 0.009  |                                     |                           |        |  | 14   |                                   | D/A converter; external power supply; remote polarity inversion.                              |  |           |       |
| ARCAM                 | 170 CD Transport(RI)                                       |   |               |  |          |        |                     |   |  |                                     |                           |        |  |  | 1295.00                           | CD transport.   |  |           |       |
|                       | Delta Black Box  |   |               |  |          |        |                     |   |  |                                     |                           |        |  |  |                                   |   |  |           |       |
|                       | Delta 70(RD)   | 1 | 16-4X         | A  | F        | F/V    | HL/D                | 20-20 ± 0.3<br>20-20 ± 0.6  | 110<br>105   | 0.01<br>0.008                       | T                         |        | 20   | D/E  | 8<br>10                           | 649.95<br>999.95  | D/A converter. Optional remote, \$99.95. |           |       |
| ARISTON               | Encore CD Player(RI)                                       | 1 | 16-4X         | A  | F        | H/D    | 2-20                | 105   | 0.002  | B                                   | B                         |        |  | 15   | 479.00                            |   |  |           |       |
| AUDIO DYNAMICS        | CD-1000E(RI)   | 1 | 16-1X         | C  | F        | None   | 20-20 ± 0.5         | 96  | 0.005  | T                                   | D                         | 16     | D/T/E  | 10 5/8   | 249.00                            |   |  |           |       |
|                       | CD-2000E(RI)   | 1 | 16-4X         | A  | F        | None   | 10-20 ± 0.5         | 96  | 0.005  | T                                   | D                         | 16     | D/T/E  | 8 1/4  | 399.00                            |   |  |           |       |
| A.V.A.                | FET 3(RI)  | 1 | 16-4X         | A  | F        | H      | 5-20 ± 0.02         | 101   | 0.002  | T                                   |                           | 20     | D/T/E  | 10   | 350.00                            |   |  |           |       |
|                       | FET 3 Plus(RI)   | 1 | 16-4X         | A  | F        | H      | 3-20 ± 0.02         | 103   | 0.001  | T                                   |                           | 20     | D/T/E  | 10   | 550.00                            |   |  |           |       |
|                       | Transcendence(RI)  | 1 | 16-4X         | A  | F        | H      | 2-20 ± 0.01         | 105   | 0.001  | T                                   |                           | 20     | D/T/E  | 11   | 950.00                            |   |  |           |       |
|                       | FET Valve(RI)  | 1 | 16-4X         | A  | V        | H      | 1-20 ± 0.01         | 107   | .0009  | T                                   |                           | 20     | D/T/E  | 16   | 1195.00                           |   |  |           |       |

ES

# The Sony CDP-R1.

Its very existence tells  
you why our other CD players  
have an unfair advantage.

Place DAT CD D/A  
tab here





# The unchallenged leadership of our reference standard CD player brings extraordinary technological advantages to the entire ES line.

Start with the world's most accomplished digital audio engineers—the ones who invented the Compact Disc format itself. Free them from the usual budgetary constraints. And challenge them to surpass their best efforts in transport design, servo circuitry, digital filtering, and system architecture.

The result is the Sony CDP-R1/DAS-R1 Compact Disc Reference System. This remarkable component compelled *Stereophile's* J. Gordon Holt to hail it as "...the best CD player I have heard at the time of writing."

Digital Sync for jitter-free performance.

In designing the CDP-R1, Sony ES engineers recognized a critical obstacle to improving CD playback quality: time-base errors known as "jitter." When jitter is present at the input to the D/A converter, these errors cause modulation in the analog signal, veiling the music and deforming the soundstage.

Our investigations led to the development of the Sony CXD-8003 Digital Sync IC. Incorporated into three new ES Series players, it maintains time-base

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tab here



And in Japan and Europe, the R1 has likewise driven the leading audiophile critics to unstinting admiration. But at a suggested retail price of \$8,000, it has been an experience reserved for the uncompromising few. Until now.

Now the Sony ES engineers have applied the invaluable lessons learned in the CDP-R1 to our other ES Series Compact Disc players. Which means now you can enjoy many of the benefits of an \$8,000 masterpiece without spending \$8,000.

## Noise Shaping with 45-bit Processing.

The accumulation of fractional errors in conventional digital filters can result in less than full 16-bit decoding accuracy. That's why the Sony CXD-1144 digital filter IC of the CDP-R1 calculates to an unprecedented precision of 45 bits, while operating at an 8X oversampling rate. And it's this advanced technology that has been incorporated in our new CDP-508ESD, 608ESD, and X7ESD players.

To convey this superlative accuracy to the digital-to-analog converter, these players also incorporate Sony Noise Shaping technology. Noise Shaping reduces requantization noise and allows the 18-bit linear converters to extract more musical detail than ever before. In particular, bass fundamentals are reproduced with a strength and clarity that leaves conventional CD players far behind.

accuracy within millionths of a second, correcting errors long before they can affect the music.

## Low-Noise Servo Stabilizer Circuit

For the CDP-R1, Sony ES engineers even examined the conventional assumptions about the most basic of CD functions: disc tracking. The result is Sony's Servo Stabilizer Circuit, a trailblazing design we've carried over to our other models. This stabilizer not only improves tracking on badly scratched discs, but reduces radiated servo noise by as much as 10 dB.

## A performance sustained.

With a technical heritage such as this, it's no wonder the new ES Series CD players and CD changers perform so much better than so many others. But then, it's a superiority we really shouldn't flaunt. After all, we did start with an unfair advantage.

The excellence of Sony's ES Series is also reflected in the three-year limited parts and labor warranty (see your authorized Sony ES dealer for details). For more information on where you can audition the full line of Sony ES components, call 201-930-7156 (Monday-Friday, 9:00am-5:00pm EST).

For More Information



Call 1-800-553-4355



**SONY**

THE LEADER IN DIGITAL AUDIO™

# CD PLAYERS & D/A CONVERTERS

| MANUFACTURER          | Model<br>(RI) = Remote Included,<br>(RD) = Remote Optional  | Disk Capacity  | Decoding System:<br>Number of Bits   | Digital Filter:<br>Line Outputs                                    | Over-sampling Rate   | Other Outputs:<br>Headphone = H,<br>Subphone = S, Digital = D, Fiber Optic = F                        | Frequency Response, Hz to kHz, $\pm$ dB  | S/N Ratio, "A" Wtd., $\pm$ dB  | THD, %   | Engaged Time Display,<br>From Disc Start = 0,<br>Remaining Time Display To Disc End = D,<br>To Track End = T, To Side = S | Number of Programmable Selections                                  | Repeat Functions: Entire Disc = D, Track = T,<br>A-B Phrase = P, Entire Program = E | Weight, Lbs.   | Price, \$  | Notes   |  |
|-----------------------|---|--|--|--|--|---|--|--|--|---|--|---|--|--|---|--|
| BANG & OLUFSEN        | CD3300(RD)<br>CD4500(RD)<br>CD5500(RD)  | 1<br>1<br>1  | 16-4X<br>16-4X<br>16-4X  | A<br>A<br>A  | F<br>F<br>F  | D<br>D<br>D   | 3-20 $\pm$ 0.3<br>3-20 $\pm$ 0.3<br>3-20 $\pm$ 0.3   | 100<br>110<br>110  | 0.003<br>0.003<br>0.003  | B<br>B<br>B   | D<br>D<br>E  | D<br>D<br>E   | 10.8<br>9.9<br>14.1  | 775.00<br>800.00<br>1100.00  |   |  |
| BRITISH FIDELITY      | Digilog   |  | 16   |  |  | F   | 14-20  |  | .0001  |   |  |   |  | 995.00   | D/A converter.  |  |
| CAE                   | MCD-12  | 1  | 16-4X  | A  | F  |   | 0-20 $\pm$ 0.05  | 95   | .0015  |   |  |   |  | 1100.00  | Modification of 16-bit Magnavox/Philips player.   |  |
| CALIFORNIA AUDIO LABS | Icon(RI)<br>Tercet MkIII(RI)<br>Aria MkII(RI)<br>Tempest III(RI)  | 1<br>1<br>1<br>1   | 18-8X<br>18-8X<br>18-8X<br>18-8X   | A<br>A<br>A<br>A   | F<br>F<br>F<br>F   | †<br>†<br>†<br>None   | 10-20 $\pm$ 0.0-0.5<br>10-20 $\pm$ 0.0-0.1<br>10-20 $\pm$ 0.0-0.1<br>10-20 $\pm$ 0.0-0.1   | 106<br>106<br>110<br>110   | 0.005<br>0.020<br>0.010<br>0.008   | B<br>B<br>B<br>B  | B<br>B<br>B<br>B   | 20<br>20<br>20<br>20  | D/T/E<br>D/T/E<br>D/T/E<br>D/T/E   | 10<br>12   | 695.00<br>1295.00<br>1995.00<br>4495.00   | †Optional digital and fiber-optic outputs.   |
| CARRERA               | CD-3200<br>CD-7500(RI)  | 1<br>6   | 16-2X<br>16-4X   | A<br>A   | F<br>F   | H<br>H  | 20-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5   | 95<br>96   | 0.01<br>0.009  | D<br>B  | D<br>B   | 32  | D/T/P<br>D/T/E   | 9<br>13  | 199.95<br>449.95  | Combination CD changer/tape deck (see also "Cassette Decks").  |
| CARVER                | DTL-3300(RI)<br><br>DTL-3200(RI)<br>DTL-3100(RI)  | 1<br><br>1<br>1  | 18-8X<br><br>16-8X<br>16-4X  | A<br><br>A<br>A  | F<br><br>F<br>F  | HL<br><br>HL<br>HL  | 5-20 $\pm$ 1<br><br>2-20 $\pm$ 1<br>2-20 $\pm$ 1   | 110<br><br>110<br>110  | 0.002<br><br>0.005<br>0.005  | B<br><br>B<br>B   | B<br><br>B<br>B  | 22<br><br>32<br>16  | D/T/P/E<br><br>D/T/P/E<br>D/T/P/E  | 13<br><br>13<br>12   | 699.95<br><br>449.95<br>349.95  | Digital Time Lens time-domain correction circuitry.<br>As above.<br>As above.  |
| CITIZEN               | CBM-50CP(RD)<br><br>CBM-3000(RD)<br><br>CBM-777<br><br>CBM-2200   | 1<br><br>1<br><br>1<br>1   | 16-2X<br><br>16-2X<br><br>16-2X<br>16-2X   | B<br><br>B<br><br>B<br>B   | <br><br><br><br>H<br>H   | H<br><br>HL<br>H  | 20-20<br>+ 0.5, -1.5<br><br>20-20<br>+ 0.5, -1.5<br><br>20-20<br>+ 1, -3<br><br>20-20<br>+ 0.5, -1.5   | 92<br><br>92<br><br>80<br>92   | <br><br><br><br><br>0.003<br>0.004<br>0.0035   | <br><br><br><br><br>B<br>B<br>B<br>B  | <br><br><br><br><br>B<br>B<br>B<br>B                               | 16<br><br>16<br><br>16<br>16  | <br><br><br><br><br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E   | 0.8<br><br>3<br><br>3<br>1   | 249.99<br><br>329.95<br><br>169.00<br>244.95  | Portable; includes headphones and a.c. adaptor.<br>Portable; optional wired or wireless remote, \$40.00; includes a.c. adaptor and battery recharger.<br>Portable; includes battery pack and a.c. adaptor.<br>Portable; includes headphones, rechargeable battery, and a.c. adaptor.   |
| CONRAD-JOHNSON        | DF-1(RI)  | 1  | 14-4X  | A  | F/B  |   | 5-19 $\pm$ 0.5   |  | 0.25   | T   |  |   | D/T/E  | 19   | 1595.00   | CD player/preamp; see also "Preamplifiers."  |
| CYRUS                 | PCMI(RI)  | 1  | 16-4X  | A  | V  | HL/D  | 20-20 $\pm$ 0.5  | 96   | 0.003  | B   | B  | 20  | D/T/P/E  | 16   | 999.00  |  |
| DENDON                | DCD-3520(RI)<br><br>DCD-1520(RI)<br><br>DCD-1420(RI)<br>DCM-777(RI)<br>DCM-555(RI)<br>DCD-920(RI)<br><br>DCD-820(RI)<br><br>DCD-620(RI)<br>DCD-520(RI)<br><br>DCP-100 | 1<br><br>1<br><br>1<br>6<br>6<br>1<br><br>1<br><br>1<br>1<br><br>1 | 20-8X<br><br>20-8X<br><br>20-8X<br>20-8X<br>20-8X<br>20-8X<br><br>16-8X<br><br>16-8X<br>16-4X<br><br>16-8X | A<br><br>A<br><br>A<br>A<br>A<br>A<br><br>A<br><br>A<br>A<br><br>A | F/B<br><br>F/V<br><br>F/V<br>F/V<br>F/V<br>F/V<br><br>V<br><br>F<br>F<br><br>V | HL/D/F<br><br>HL/D/F<br><br>HL/D/F<br>HL/D/F<br>HL/D/F<br>HL/D/F<br><br>HL/D<br><br>HL<br>H<br><br>HL | 2-20 $\pm$ 0.2<br><br>2-20 $\pm$ 0.2<br><br>2-20 $\pm$ 0.2<br>4-20 $\pm$ 0.2<br>4-20 $\pm$ 0.1<br>2-20 $\pm$ 0.2<br><br>2-20 $\pm$ 0.2<br><br>2-20 $\pm$ 0.2<br>2-20 $\pm$ 0.2<br><br>2-20 $\pm$ 0.2 | 118<br><br>115<br><br>108<br>106<br>103<br>106<br><br>102<br><br>100<br>98<br><br>90 | .0015<br><br>.0025<br><br>0.003<br>0.003<br>0.004<br>.0035<br><br>0.004<br><br>0.004<br>0.005<br><br>0.005 | B<br><br>B<br><br>B<br>T<br>T<br>B<br><br>B<br><br>B<br>B<br><br>B  | B<br><br>B<br><br>B<br>T<br>T<br>B<br><br>B<br><br>B<br>B<br><br>B | 20<br><br>20<br><br>20<br>32<br>32<br>20<br><br>20<br><br>20<br>20<br><br>32        | D/T/P/E<br><br>D/T/P/E<br><br>D/T/P/E<br>D/T/E<br>D/T/E<br>D/T/P/E<br><br>D/T/P/E<br><br>D/P/E<br>D/T/E<br><br>D/T/E | 37½<br><br>23½<br><br>28½<br>13¼<br>13¼<br>11<br><br>9<br><br>8½<br>8½<br><br>1½ | 1500.00<br><br>750.00<br><br>600.00<br>700.00<br>550.00<br>500.00<br><br>400.00<br><br>300.00<br>250.00<br><br>399.00 | Dual D/A converters adjusted for four MSBs.<br>Dual D/A converters adjusted for MSB.<br>As above.<br>As above; changer.<br>As above.<br>Dual D/A converters adjusted for MSB.<br>As above; noise shaping.<br>As above.<br>Dual D/A converters adjusted for MSB.<br>Portable; includes a.c. adaptor and rechargeable battery. |
| DISTECH               | LSI MKIII(RI)<br>LSI MKIV(RI)<br>LSI MKV(RI)<br><br>LSI MKV Signature (RI)  | 1<br>1<br>1<br><br>1   | 16-4X<br>16-4X<br>16-4X<br><br>16-4X   | A<br>A<br>A<br><br>A   | F<br>F<br>F<br><br>F   | HL/D<br>HL/D<br>HL/D<br><br>HL/D/F  | 2-20<br>2-20<br>2-20<br><br>0-20   | 110<br>110<br>120<br><br>120   | 0.001<br>0.001<br>0.001<br><br>0.001   | B<br>B<br>B<br><br>B  | B<br>B<br>B<br><br>B   | 20<br>20<br>20<br><br>20  | D/T/P/E<br>D/T/P/E<br>D/T/P/E<br><br>D/T/P/E   | 10<br>15<br>20<br><br>40   | 1195.00<br>1495.00<br>3500.00<br><br>4000.00  | External power supply.<br>Two external power supplies.<br>As above.  |
| DUAL                  | CD5070RC(RI)<br>CD5150RC(RI)  | 1<br>1   | 16-2X<br>16-4X   | A<br>A   | F<br>F   | H<br>H/D  | 20-20 $\pm$ 0.5<br>20-20 $\pm$ 0.1   | 100<br>100   | 0.010<br>0.01  | B<br>B  | B<br>B   | 8<br>20   | D/E<br>D/T/P/E   | 12<br>12   | 450.00<br>500.00  |  |
| ESOTERIC              | P1/D1(RI)   | 1  | 18-4X  | A  | V  |   | 0-20 $\pm$ 0.5   | 100  | .0015  |   |  | 40  | D/T/P/E  | 50½  | 5995.00   |  |
| EUPHONIC TECHNOLOGY   | ET650 PX Signature(RI)  | 1  | 16-4X  | A  | F  | D   | 20-20 $\pm$ 0.02   | 110  | 0.002  | T   | D  | 20  | D/T/P/E  | 12½  | 1595.00   |  |
| FISHER                | AD-ZI(RI)<br>DAC-ZI(RI)<br>AD-751(RI)<br>AD-752(RI)<br>DAC-199(RI)  | 1<br>5<br>1<br>1<br>5  | 18-8X<br>18-8X<br>16-8X<br>16-8X<br>16-8X  | A<br>A<br>A<br>A<br>A  | F<br>F<br>F<br>F<br>F  | HL/D/F<br>HL/D/F<br>None<br>None<br>HL  | 2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5  | 116<br>116<br>90<br>100<br>100   | .0025<br>.0025<br>0.07<br>0.005<br>0.005   | B<br>B<br>B<br>B<br>B   | B<br>B<br>B<br>B<br>B  | 20<br>32<br>16<br>16<br>32  | D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E  | 17.8<br>20.4<br>8.4<br>8.4<br>12.1   | 649.95<br>799.95<br>199.95<br>219.95<br>299.95  | Changer.<br>As above.  |



# CD PLAYERS & D/A CONVERTERS

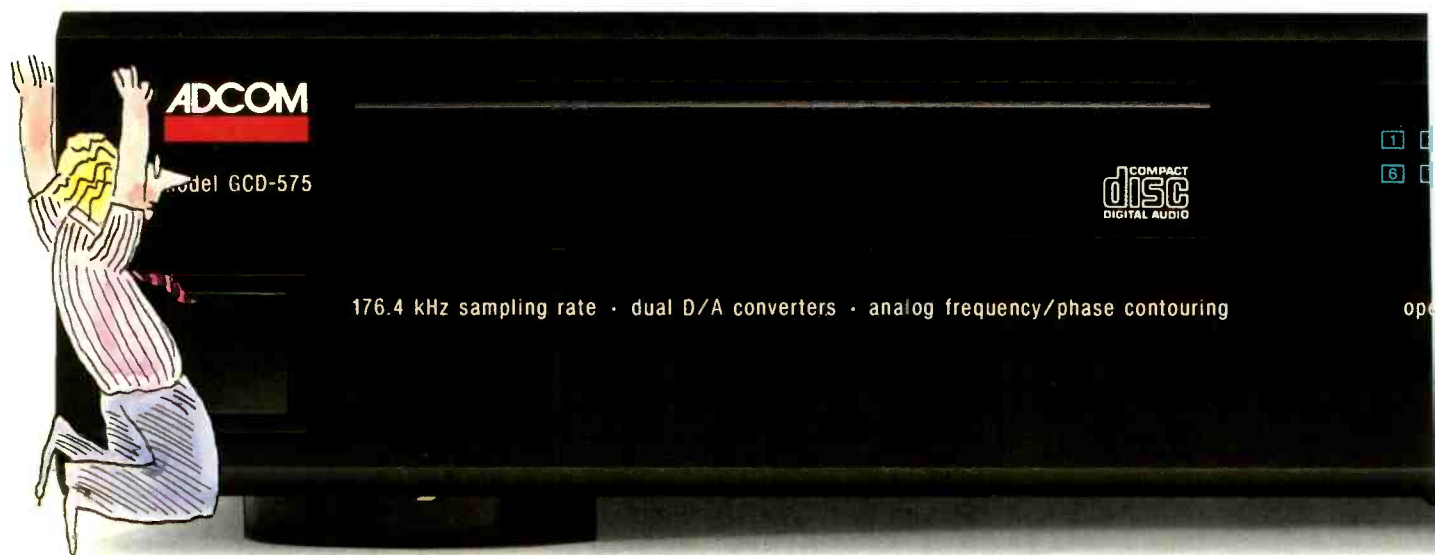
| MANUFACTURER  | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional  | Disc Capacity                             | Decoding System:<br>Number of Bits  | Output Filteration: Analog Plus Digital = A,<br>Digital Only = B, Analog Only = C | Line Outputs: Fixed = F, Var. = V, Balanced Analog = B | Other Outputs: Headphone = H,<br>Headphone with Level Control = HL,<br>Subcode Only = S, Digital = D, Fiber Optic = F | Frequency Response, Hz to kHz, $\pm$ dB  | S/N Ratio, "A" Wtd., $\pm$ dB                               | THD, %  | Elapsed Time Display: From Disc Start = 0,<br>From Track Start = 8, 9 | Repeating Time Display: From Disc Start = 0,<br>To Track End = 8, 9 | Number of Programmable Selections                  | Repeat Functions: Entire Disc = D, Track = T,<br>A-B Phrase = P, Entire Program = E   | Weight, Lbs.   | Price, \$  | Notes  |
|---------------|---|---|---|---|--|---|--|---|---|---|---|--|---|--|--|--|
| GOLDSTAR      | GCD-646R(RI)<br>GCD-626R(RI)<br>GCD-613   | 1<br>1<br>1                               | 16-4X<br>16-2X<br>16-2X   | A<br>A<br>A   |  | H<br>H<br>H   | 2-20 $\pm$ 0.5<br>5-20 $\pm$ 0.5<br>5-20 $\pm$ 1.5   | 100<br>93<br>85   | 0.005<br>0.02<br>0.025  | T<br>B<br>B   | B<br>B<br>B   | 20<br>15<br>9                                      | D/T/P/E<br>D/E<br>D/E   | 9.9<br>9<br>9  | 299.00<br>239.00<br>209.00   |  |
| GRUNDIG       | CD-9000(RI)<br>CD-903(RI)   | 1<br>1                                    | 16-4X<br>16-4X  | A<br>A  | F/V<br>F   | HL/D<br>HL  | 20-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5   | 101<br>101  | .0035<br>0.005  | B<br>B  | B<br>B  | 20<br>20   | D/T/P/E<br>D/T  |  | 1099.00<br>899.00  |  |
| HAFLER        | Iris CD(RO)   | 1   | 16-4X   | A   | F  |   | 20-20 $\pm$ 0.1  |   |   | T   |   | 20   | D/E   |  |  |  |
| HARMAN KARDON | HD7300<br>HD7400(RI)<br>HD7500(RI)<br><br>HD7600(RI)  | 1<br>1<br>1<br>1                          | 18-4X<br>18-4X<br>PWM<br>PWM  | A<br>A<br>A<br>A  | F<br>F/V<br>F/V  | H<br>H<br>H/D/F   | 4-20 $\pm$ 0.2<br>4-20 $\pm$ 0.2<br>4-20 $\pm$ 0.2   | 100<br>100<br>106<br>106                                    | 0.008<br>0.008<br>0.003<br>0.003  | B<br>B<br>B<br>B  | B<br>B<br>B<br>B  | 36<br>36<br>30<br>30                               | D/T/E<br>D/T/E<br>D/T/P/E<br>D/T/P/E  |  | 299.00<br>349.00<br>449.00<br>599.00   | Pulse width modulated bit stream; third-order noise shaping. As above.   |
| HITACHI       | DA-6500<br>DA-8200SW(RI)<br>DA-C700SW(RI)   | 1<br>1<br>12                              | 16<br>16-2X<br>16-2X  | C<br>A<br>A   | F<br>F<br>V  | HL<br>HL  | 5-20<br>5-20<br>5-20   | 93<br>90<br>95  | 0.005<br>0.008<br>0.006   | B<br>B<br>B   |   | 24<br>24<br>32                                     | D/T/P/E<br>D/T/P/E<br>D/T/E   | 6 1/2<br>6 1/2<br>12 1/2   | 200.00<br>280.00<br>550.00   | Changer.   |
| JVC           | XLV211BK<br>XLV311BK(RI)<br>XLZ411BK(RI)<br>XLZ611BK(RI)<br>XLG512BK(RI)<br><br>XLZ1010TN(RI)<br>XLM301BK<br><br>XLM401BK(RI)<br>XLM701BK(RI) | 1<br>1<br>1<br>1<br>1<br>1<br>6<br>6<br>7 | 18-4X<br>18-4X<br>18-4X<br>18-4X<br>18-4X<br>18-8X<br>18-4X<br>18-4X<br>18-4X | B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B   | F<br>F<br>F/V<br>F/V<br>F/V<br>F/V<br>F<br>F<br>F      | H<br>H<br>HL/D<br>HL/D/F<br>HL<br>HL/D/F<br>F<br>H/D<br>HL/D  | 2-20<br>2-20<br>2-20<br>2-20<br>2-20<br>2-20<br>2-20<br>2-20<br>2-20   | 100<br>100<br>104<br>106<br>104<br>108<br>100<br>100<br>100 | 0.004<br>0.004<br>.0035<br>.0035<br>.0035<br>0.003<br>0.004<br>0.004<br>0.004 | T<br>B<br>T<br>T<br>T<br>T<br>B<br>T<br>T                             | B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B                           | 32<br>32<br>32<br>32<br>32<br>32<br>32<br>32<br>32 | D/T/E<br>D/T/E<br>D/T/P/E<br>D/T/P/E<br>D/T/P/E<br>D/T/P/E<br>D/T/E<br>D/T/E<br>D/T/E | 8<br>8<br>8.4<br>8.4<br>16.4<br>12.2<br>12.4<br>15.3                 | 230.00<br>275.00<br>320.00<br>480.00<br>500.00<br>700.00<br>350.00<br>380.00<br>570.00                                       | Dual D/A converters. As above. As above. As above. As above; graphics capability. Four D/A converters. Changer; dual D/A converters. As above. As above. |
| KENWOOD       | DP-8010(RI)<br>DP-7010(RI)<br>DP-3010(RI)<br>DP-2010(RI)<br>DP-1510(RO)<br>DP-M6010(RI)<br>DP-M4010(RI)                                       | 1<br>1<br>1<br>1<br>1<br>7<br>6           | 18-8X<br>18-8X<br>16-8X<br>16-4X<br>16-4X<br>16-8X<br>16-4X                   | A<br>A<br>A<br>A<br>A<br>A<br>A   | F/V<br>F/V<br>F/V<br>F<br>F<br>F<br>F                  | HL/D/F<br>HL/D<br>HL<br>H<br>H<br>H<br>H  | 4-20<br>4-20<br>10-20<br>10-20<br>10-20<br>10-20<br>10-20  | 112<br>108<br>100<br>100<br>100<br>102<br>98                | .0015<br>.0025<br>0.007<br>0.008<br>0.008<br>0.006<br>0.007                   | B<br>B<br>B<br>B<br>B<br>B<br>B                                       | B<br>B<br>B<br>B<br>B<br>B<br>B                                     | 16<br>16<br>16<br>16<br>16<br>32<br>32             | D/T/P/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E                         | 21<br>13<br>8 1/2<br>8 1/2<br>8 1/2<br>15<br>6                       | 650.00<br>449.00<br>349.00<br>279.00<br>249.00<br>449.00<br>349.00   | Digital jitter elimination circuit. As above. As above. As above. 6 plus 1 changer. Changer.   |
| KINERGETICS   | KCD-40(RI)<br>KCD-20B(RI)   | 1<br>1                                    | 18-8X<br>16-4X  | A<br>A  | V<br>V   |   | 20-20 $\pm$ 1<br>20-20 $\pm$ 1   | 115<br>115  | 0.02<br>0.02  | T<br>T  | T<br>T  | 20<br>20   | D/T/E<br>D/T/E  | 23<br>23   | 1995.00<br>1195.00   |  |
| KRELL DIGITAL | SBP-64X<br>SBP-16X<br>MD-1(RI)  | 1   | 18-64X<br>18-16X  |   | F/B<br>F   | D/F   | 20-20<br>20-20   | 110<br>110  | 0.03<br>0.03  | T<br>T  |   | 20   | D   | 30<br>20<br>30   | 8950.00<br>3200.00<br>4000.00  | Dual D/A converters. As above. Top-loading CD turntable.   |
| LUXMAN        | D-105u(RI)<br>DZ-111(RI)<br>DZ-112(RI)<br>DC-113(RI)<br>D-113D(RI)  | 1<br>1<br>1<br>1<br>1                     | 18-8X<br>16-4X<br>18-8X<br>16-8X<br>18-8X                                     | A<br>A<br>A<br>A<br>B   | F/V<br>F<br>F/V<br>F<br>B                              | HL/D/F<br>HL/D<br>HL/D<br>HL/D<br>D/F   | 5-20 +0, -1<br>5-20 +0, -0.5<br>5-20 +0, -0.5<br>5-20 +0, -0.5   | 105<br>105<br>106<br>98                                     | 0.05<br>0.06<br>0.005<br>0.008  | B<br>B<br>B<br>B  |   | 32<br>32<br>32<br>32<br>16                         | D/T<br>D/T<br>D/T<br>D/T<br>D/T   | 18.7<br>9.3<br>9.9<br>11.2<br>9.7                                    | 1200.00<br>350.00<br>500.00<br>680.00<br>550.00  | Hybrid with tubes. $\pm$ 6 plus 1 changer.   |
| MADRIGAL      | Proceed CD(RI)  | 1   | 18-8X   | A   | F/B  | D   | 10-20 +0, -0.2   | 105   | 0.004   | D   |   | 20   | D/T/E   | 27   | 1650.00  |  |
| MAGNAVOX      | CDB-490(RO)<br>CDB-492(RI)<br>CDB-494(RO)<br><br>CDB-496(RI)<br>CDB-583(RI)<br>CDB-586(RI)<br><br>CDB-610(RI)<br>CDB-630(RI)                  | 1<br>1<br>6<br>6<br>6<br>6<br>1<br>1      | 16-1X<br>16-1X<br>16-1X<br>16-1X<br>16-4X<br>16-4X<br>16-4X<br>16-4X          | C<br>C<br>C<br>C<br>C<br>C<br>C<br>C  | F<br>F<br>F<br>F<br>F<br>F<br>F<br>F/B                 | H<br>H<br>H<br>H<br>H<br>H<br>H<br>H/D  | 2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5 | 90<br>90<br>90<br>90<br>100<br>100<br>100<br>105            | 0.02<br>0.02<br>0.02<br>0.02<br>0.015<br>0.015<br>.0025<br>.0025              | T<br>T<br>T<br>T<br>T<br>T<br>T<br>T                                  | B<br>B<br>B<br>B<br>B<br>B<br>B<br>B                                | 20<br>20<br>30<br>30<br>30<br>30<br>20<br>20       | D/E<br>D/E<br>D/E<br>D/E<br>D/E<br>D/T/P/E<br>D/T/P/E                                 | 9<br>9<br>11<br>11<br>12.1<br>12.1<br>9<br>9                         | 169.95<br>179.95<br>269.95<br>299.95<br>392.95<br>349.95<br>229.95<br>399.95   | Changer; optional single-disc tray. As above. As above. Changer; Favorite Track Selection. Dual Favorite Track Selection.                                |
| MARANTZ       | CD-94(RI)<br>CDA-94<br><br>CD-2472(RI)<br>CD-3577(RI)<br>DC-3587(RI)<br>CD-40(RO)<br>CDC-320(RI)<br>DC-2482(RI)                               | 1<br>1<br>1<br>1<br>5<br>1<br>6<br>6      | 16-4X<br>16-4X<br>16-2X<br>16-2X<br>16-4X<br>16-2X<br>16-4X<br>16-2X          | A<br>A<br>A<br>A<br>A<br>A<br>C<br>C  | B<br>F/V/B<br>F<br>B<br>F<br>F<br>F                    | HL/D/F<br>HL/D/F<br>HL<br>HL<br>HL<br>HL<br>HL  | 4-20 $\pm$ 0.5<br>2-20 $\pm$ 0.1<br>4-20 $\pm$ 0.5<br>4-20<br>2-20<br>4-20 $\pm$ 1   | 96<br>101<br>95<br>100<br>95<br>95<br>0.01                  | 0.003<br>0.003<br>0.007<br>0.005<br>0.05<br>0.05<br>0.01                      | B<br>B<br>B<br>B<br>B<br>B<br>B                                       | B<br>B<br>B<br>B<br>B<br>B<br>B                                     | †<br>20<br>20<br>20<br>16<br>15<br>32              | D/T/P/E<br>D/T/P/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E                       | 28<br>25<br>229.95<br>450.00<br>380.00<br>249.00<br>369.00<br>329.95 | †1600. Favorite Track Selection. D/A converter with fiber-optic and coaxial inputs. Timer play. Changer. As above. As above. |  |
| McINTOSH      | MCD7007(RI)   | 1   | 16-4X   |   | F/V  | H/D   | 20-20 +0, -0.3   | 114   | .0012   | B   | D   | 20   | D/T/P/E   | 18   | 1995.00  |  |
| MEITNER AUDIO | CD-3(RI)  | 1   | 16-4X   | A   | F  | D   | 20-20 $\pm$ 0.5  | 96  |   | B   | B   |  | D/T/P/E   | 25   | 3050.00  | Floating-charge power supply.  |
| MELOS AUDIO   | CD-TB(RI)<br>CD-TiIB(RI)<br>Melos Processor   | 1<br>1<br>1                               | 18-8X<br>18-8X<br>18-8X   | A<br>A<br>A   | V<br>V<br>F  | F<br>F<br>F   | 20-20 $\pm$ 0.2<br>20-20 $\pm$ 0.2<br>20-20 $\pm$ 0.2  | 90<br>90<br>90  | 0.07<br>0.07<br>0.07  | B<br>B<br>B   |   | 20<br>20<br>33                                     | D/T/E<br>D/T/E<br>D/T/E   | 28<br>26<br>33   | 1895.00<br>1595.00<br>2300.00  | Tube analog chassis with preamp function. Tube analog chassis; external power supply. D/A converter; two chassis, tube analog and digital.               |

All good  
things come  
to those  
who wait.





# Finally. A that reproduces not just bits a



**A**dcom's new GCD-575 Compact Disc Player has been worth waiting for. Now there's a CD player with analog audio circuits as technically advanced as its digital stages.

Since the human ear can only appreciate musical sounds in their analog format, Adcom began with the objective of producing the first affordable CD player whose direct-coupled audio output would deliver the long anticipated technical benefits of digital sound.

## Class "A" Makes A Difference

Designers and engineers usually use Class "A" audio circuits where price is no object. In its purest form, Class "A" offers a highly sophisticated level of audio amplification, often demanded by those who can distinguish outstanding sonic performance from the merely average. Adcom's GCD-575 employs a no-compromise, Class "A" analog audio amplifier section which provides superior resolution by more clearly defining low-level information.

# CD player all of the music, and bytes of it.



This higher resolution makes an audibly dramatic difference in the musicality of CD reproduction. To achieve this result, the analog audio circuits in the GCD-575 were based on the same proprietary high speed linear amplifiers used in Adcom's GFP-555 preamplifier, universally recognized for its outstanding musical integrity.

No other CD player at any price uses these superb audio components.

## Digital Sound At Its Best

Adcom's selectable analog frequency/phase contour circuit enhances the musicality of CD's which have been poorly mixed, or digitally over equalized. Subtly contoured by the AFPC, many of these CDs become more listenable, with much of the fatiguing harshness and "glare" reduced. In addition, the stereo image and sound stage becomes more focused allowing for a more natural sonic presentation.

*(Over please)*



# The Adcom GCD-575

## Details You Can Hear

Importantly, Adcom's CD player is designed with a low output impedance (100 Ohms) so that it can operate up to its maximum capability with a wide variety of associated equipment. It is not only compatible with virtually all input stages of amplifiers, preamplifiers, tuner/preamplifiers, etc., but also permits the use of longer interconnecting audio cables, when required, with minimal signal deterioration.

Additionally the GCD-575 is supplied with a high quality, low-loss audio cable to prevent the sonic smear that conventional audio cables tend to cause. The use of this special cable and the 100 Ohm output impedance permits the GCD-575 to be used with Adcom's SLC-505 passive straight line controller. If no other source equipment will be used, the variable output (front panel controlled) can be used directly into your power amplifier, bypassing the preamplifier circuits normally required by other CD players.

A multi-winding power transformer, connected to three separate tightly regulated power supplies for the audio, digital and display circuitry, insures isolation of the different functions and optimal operation of each without interference.

The four special heavy feet installed on the GCD-575 are reversible metal castings. On one side, the flat surface insures a wide contact area. The reverse side is cast with built-in "Iso-points" which, when used in a three-foot configuration, operates as a "tripod" support system.

A special polarity-inverting switch permits you to reverse the normal positive polarity to negative (inverted) polarity. This corrects playback of CDs in which the polarity was incorrectly recorded (inverted), or for use in systems in which one of the components causes a reversal of correct polarity.



*Full Function Remote Control*

## Specifications

**Frequency Response:** 5Hz - 20kHz, +0.1, -0.5dB

**Signal-to-noise Ratio:** 105dB

**Dynamic Range:** 98dB

**THD:** 0.0025%

**IMD (70Hz difference):** @ 5kHz  
0.00018%

**Channel Separation (1kHz):** 95dB

**Interchannel Phase Shift:**  
@ 20kHz Less than 1.8°

**Output Impedance:** Fixed 100Ω/  
Variable 100Ω/Digital 75Ω

**Output Level:** Fixed 2.5V RMS  
Variable Greater Than 4.5V RMS  
Digital 0.5V peak-to-peak

**Sampling Rate:** 176.4kHz

**Quantized Bits:** 16-bit linear

**Power:** 120VAC/60Hz  
(Available in 220/240V, 50Hz)

**Dimensions:** 17" (430mm)W ×  
11-1/4" (285mm)D ×  
3-7/16" (87mm)H

**Weight:** 12 lbs. (5.5 kg.)

**Optional:** Model RM-3 rack mount  
adaptors. Available with white front  
panel.

*Specifications subject to change  
without notice.*

## More Features For Better Value

Other features include a full function remote-control system with random access track capability; low group-delay digital and analog filters; triple-beam laser format; a direct digital output; playback of 3-inch discs without an adaptor; and a very-high-quality headphone output.

The GCD-575's advanced facilities include:

- Programming of up to 24 tracks
- Programming of any phrase
- Audible fast forward and reverse
- Adjustable intros can
- Auto space

Display functions include:

- Elapsed time on track or disc
- Time remaining on track or disc
- Programmed tracks
- Track being played
- Number of tracks up to 20

## Why Should You Listen To Us?

Over the years, Adcom has earned a reputation for delivering superb performance at a modest price. The GCD-575 keeps faith with this tradition.

Once again, Adcom clears an innovative path through the jungle of confusing claims about "digital" sound, and provides a logical and direct path to musical purity.

If you've been waiting for a CD player which faithfully reproduces all of the music, not just bits and bytes of it, you'll want to visit your nearest authorized Adcom dealer right now... because while it may be true that all good things come to those who wait, you've waited long enough for a CD player this good.

**ADCOM®**  
fine stereo components

11 Elkins Road, East Brunswick, NJ 08816  
U.S.A. (201) 390-1130

Distributed in Canada by PRO ACOUSTICS INC.  
Pointe Claire, Quebec H9R 4X5

# CD PLAYERS & D/A CONVERTERS

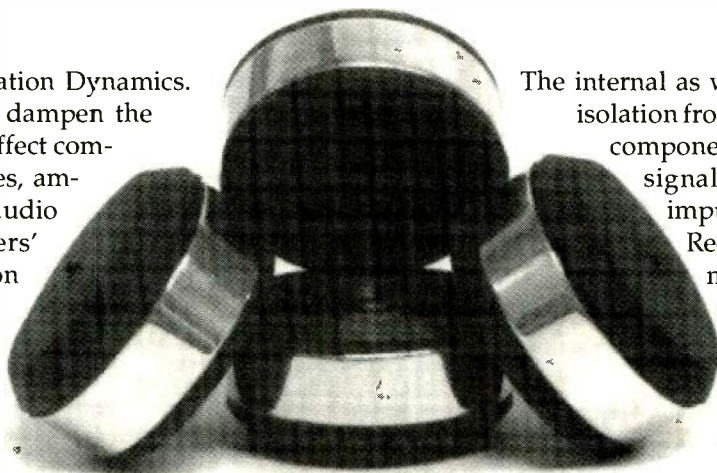
| MANUFACTURER     | Model<br>(RI) = Remote Included,<br>(RD) = Remote Optional |   | Disc Capacity | Decoding System:<br>Number of Bits | Digital Filter: Over-sampling Rate | Line Outputs: Analog Pre-Digital = A,<br>Digital Only = B, Analog Only = C | Other Outputs: Headphone = H,<br>Headphone with Level Control = HL,<br>Subcode Only = S, Digital = D, Fiber Optic = F | Frequency Response, Hz to kHz, $\pm$ dB | S/N Ratio, "A" Wtd., $\pm$ dB | THD, % | Elapsed Time Display, From Disc Start = D,<br>From Track Start = T, Both = B | Remaining Time Display, To Disc End = D,<br>To Track End = T, Both = B | Number of Programmable Selections | Repeat Functions: Entire Disc = D, Track = T,<br>A-B Phrase = P, Entire Program = E | Weight, Lbs. | Price, \$  | Notes |
|------------------|--|---|---------------|------------------------------------|------------------------------------|--|---|---|-------------------------------|--------|--|--|-----------------------------------|---|--------------|--|-------|
| MERIDIAN         | 207(RD)  | 1 | 16-4X         | A                                  | F/V                                | HL/D   | 20-20 $\pm$ 0.2   | 117                                     | 0.004                         | B      | D  | 32   | D/T/E                             |   | 1990.00      | Includes preamp functions; remote has volume control.                          |       |
|                  | 206(RI)  | 1 | 16-4X         | A                                  | F                                  | HL/D/F   | 20-20 $\pm$ 0.2   | 115                                     | 0.004                         | B      | D  | 32   | D/T/E                             |   | 1650.00      |  |       |
| MITSUBISHI       | M-C5100(RI)  | 1 | 18-8X         | A                                  | F                                  | HL/D/F   | 4-20 $\pm$ 0.5  | 104                                     | 0.003                         | T      | D  | 20   | D/T/P/E                           | 11  | 450.00       | Changer.   |       |
|                  | M-C4100(RI)  | 5 | 16-2X         | A                                  | F                                  | HL   | 8-20 $\pm$ 0.5  | 96                                      | 0.004                         | T      |  | 20   | D/T/E                             | 14  | 449.00       |  |       |
|                  | DP-212R(RI)  | 1 | 16-2X         | A                                  | F                                  | H  | 4-20 $\pm$ 0.5  | 96                                      | 0.004                         | T      | D  | 36   | D/T/E                             | 8   | 249.00       |  |       |
|                  | DP-311R(RI)  | 1 | 16-4X         | A                                  | F                                  |  | 4-20 $\pm$ 0.3  | 105                                     | 0.003                         | T      | B  | 36   | D/T/P/E                           | 14  | 499.00       |  |       |
|                  | M-V7010(RI)  | 1 | 18-4X         | A                                  | F                                  |  | 4-20 $\pm$ 5, -1  | 100                                     |                               | B      |  | 20   | D/T/P/E                           | 24  |              | CD/vidéodisc combi player.   |       |
| THE MDD SQUAD    | Prism(RI)  | 1 | 16-4X         | A                                  | F                                  | D  | 1-20 $\pm$ 0.1  | 100                                     | 0.01                          | T      |  | 20   | D/E                               | 14  | 1495.00      |  |       |
| MUSICAL CONCEPTS | Enigma(RI)   | 1 | 16-4X         | C                                  | F                                  | H  | 5-20 $\pm$ 0.1  | 100                                     | 0.003                         | T      |  | 20   | D/T/E                             |   | 595.00       | Optional digital output; shuffle play.   |       |
|                  | Era(RI)  | 1 | 16-4X         | C                                  | F                                  | H  | 5-20 $\pm$ 0.1  | 100                                     | 0.003                         | T      |  | 20   | D/T/E                             |   | 895.00       | As above.  |       |
|                  | Epoch(RI)  | 1 | 16-4X         | C                                  | F                                  | H  | 5-20 $\pm$ 0.1  | 100                                     | 0.003                         | T      |  | 20   | D/T/E                             |   | 1195.00      | As above; external dual-mono power supply.                                     |       |
| NAD              | 5100(RI)   | 1 | 16-4X         | A                                  | F/V                                | HL   | 5-20 $\pm$ 0.2  | 106                                     | 0.004                         | B      | B  | 29   | D/T/E                             | 10 3/4  | 499.00       | Changer.   |       |
|                  | 5170(RI)   | 7 | 16-4X         | A                                  | F/V                                | HL/D   | 5-20 $\pm$ 0.1, -0.3  | 103                                     | 0.006                         | B      | B  | 32   | D/T/E                             | 13 1/2  | 699.00       |  |       |
|                  | 5300(RI)   | 1 | 16-4X         | A                                  | F/V                                | HL/D   | 5-20 $\pm$ 0.5  | 111                                     | 0.002                         | B      | B  | 29   | D/T/E                             | 10 3/8  | 899.00       |  |       |
|                  | 5325(RI)   | 1 | 16-4X         | A                                  | F                                  |  | 5-20 $\pm$ 0.5  | 112                                     | 0.04                          | B      | B  | 20   | D/T/E                             | 7 3/4   | 299.00       |  |       |
|                  | 5340(RI)   | 1 | 16-8X         | A                                  | F/V                                | D  | 5-20 $\pm$ 0.1  | 107                                     | 0.003                         | B      | B  | 32   | D/T/E                             | 7 3/4   | 399.00       |  |       |
| NAKAMICHI        | DMS-7AII(RI)   | 1 | 16-4X         | A                                  | F                                  | HL   | 5-20 $\pm$ 0.5  | 104                                     | .0025                         | B      | D  | 24   | D/E                               | 16 1/2  | 1995.00      | Changer; includes single-disc tray; random play.                               |       |
|                  | DMS-5AII   | 1 | 16-4X         | A                                  | F                                  | None   | 5-20 $\pm$ 0.5  | 104                                     | .0025                         | B      | D  | 0  | D                                 | 16 1/8  | 1650.00      | As above.  |       |
|                  | CDC-4A(RI)   | 6 | 16-8X         | A                                  | F/V                                | HL/D   | 5-20 $\pm$ 0.5  | 104                                     | 0.002                         | B      | D  | 50   | D/E                               | 15 3/8  | 1195.00      |  |       |
|                  | CDC-3A(RI)   | 6 | 16-4X         | A                                  | F                                  | HL   | 5-20 $\pm$ 0.5  | 102                                     | .0025                         | B      | D  | 50   | D/E                               | 13 1/4  | 795.00       |  |       |
|                  | COP-2A(RI)   | 1 | 16-4X         | A                                  | F                                  | HL   | 5-20 $\pm$ 0.5  | 100                                     | .0025                         | B      | D  | 24   | D/E                               | 11 1/4  | 549.00       |  |       |
|                  | DMS-1A(RI)   | 1 | 16-2X         | A                                  | F                                  | None   | 5-20 $\pm$ 0.5, -1  | 96                                      | 0.006                         | B      | D  | 15   | D/E                               | 8 1/4   | 349.00       | A/D and D/A converter; three digital inputs; included with 1000DAT (see "DAT") |       |
|                  | 1000P  | 1 | 20-8X         | A                                  | F/V/B                              | HL/D/F   | 5-20 $\pm$ 0.5  | 106                                     | .0005                         |        |  |  |                                   | 38 3/8  | 4600.00      |  |       |
| NEC              | CD-530(RI)   | 1 | 16-4X         | C                                  | F                                  | HL   | 20-20 $\pm$ 0.5   | 95                                      | 0.006                         | B      | B  | 24   | D/T                               | 10 1/8  | 199.00       | Dual D/A converters.   |       |
|                  | Renaissance CD-630(RI)                                     | 1 | 16-8X         | A                                  | F                                  | HL/D   | 5-20 $\pm$ 0.5  | 105                                     | .0025                         | B      | B  | 24   | D/T/P                             | 11 1/8  | 299.00       |  |       |
|                  | Renaissance CD-730(RI)                                     | 1 | 16-16X        | A                                  | F                                  | HL/D/F   | 5-20 $\pm$ 0.5  | 105                                     | .0025                         | B      | B  | 24   | D/T/P                             | 12 1/4  | 399.00       | Four D/A converters.   |       |
|                  | Renaissance CD-830(RI)                                     | 1 | 16-16X        | A                                  | F                                  | HL/D/F   | 5-20 $\pm$ 0.5  | 105                                     | .0025                         | B      | B  | 24   | D/T/P                             | 25 1/4  | 999.00       | As above.  |       |
| NIKKO            | CD-400(RI)   | 1 | 16-4X         | A                                  | F                                  | HL   | 20-20 $\pm$ 0.5   | 100                                     | 0.005                         | B      | B  | 16   | D/T/E                             | 9   | 299.95       |  |       |
| ONKYO            | DX-1500(RD)  | 1 | 16-2X         | A                                  | F                                  | H  | 5-20  | 96                                      | 0.004                         | B      | B  | 16   | D/T/E                             | 10.6  | 250.00       | Shuffle play.  |       |
|                  | DX-1700(RI)  | 1 | 16-8X         | A                                  | F                                  | H  | 5-20  | 100                                     | 0.004                         | T      | B  | 20   | D/T/E                             | 10.4  | 300.00       | As above; D/A converter adjusted for MSB; opto-coupling.                       |       |
|                  | DX-2700(RI)  | 1 | 16-8X         | A                                  | F                                  | HL/D   | 5-20  | 100                                     | 0.004                         | T      | B  | 20   | D/T/E                             | 10.6  | 350.00       | D/A converter adjusted for MSB; opto-coupling; opto-drive.                     |       |
|                  | DX-3500(RI)  | 1 | 16-8X         | A                                  | F/V                                | HL/D/F   | 2-20  | 100                                     | 0.003                         | T      | B  | 20   | D/T/P/E                           | 11  | 420.00       | Opto-coupling; opto-drive.   |       |
|                  | Integra DX-5500(RI)  | 1 | 18-4X         | C                                  | F/V                                | HL/D/F   | 5-20  | 100                                     | 0.003                         | B      | B  | 20   | D/T/P/E                           | 17.6  | 600.00       | As above; D/A converter adjusted for four MSBs.                                |       |
|                  | Integra DX-7500(RI)  | 1 | 18-8X         | C                                  | F/V                                | HL/D/F   | 2-20  | 108                                     | .0015                         | B      | B  | 20   | D/T/P/E                           | 19.4  | 700.00       | Changer.   |       |
|                  | DX-C300(RI)  | 6 | 16-8X         | C                                  | F                                  | H  | 5-20  | 96                                      | 0.004                         | B      | B  | 40   | D/T/E                             | 12.8  | 430.00       | As above; Music File memory for 340 discs.                                     |       |
|                  | DX-C500(RI)  | 6 | 16-8X         | C                                  | F                                  | HL   | 5-20  | 96                                      | 0.004                         | B      | B  | 40   | D/T/E                             | 12.8  | 530.00       | Shuttle search; variable speed scanning and cueing; digital polarity switch.   |       |
|                  | Grand Integra DX-G10(RI)                                   | 1 | 18-8X         | A                                  | F/V                                | HL/D/F   | 2-20  | 110                                     | .0015                         | B      | B  | 16   | D/T/P/E                           | 59.5  | 2500.00      |  |       |
| PANASONIC        | SL-P3800C(RI)  | 6 | 16-4X         | A                                  | F                                  |  | 2-20 $\pm$ 0.5  | 96                                      | 0.006                         | B      | B  | 36   | D/T/E                             | 12.8  | 379.95       | Changer.   |       |
|                  | SL-PC362   | 1 | 16-4X         | A                                  | F                                  |  | 2-20 $\pm$ 1  | 96                                      | 0.05                          | B      | B  | 20   | D/T/E                             | 8.6   |              |  |       |
|                  | SL-PS352   | 1 | 16-4X         | A                                  | F                                  |  | 2-20 $\pm$ 1  | 96                                      | 0.05                          | B      | B  | 20   | D/T/E                             | 7.9   | 229.95       |  |       |
| PARASOUND        | D/VF-900(RI)   | 1 | 16-4X         | A                                  | F                                  | HL   | 5-20 $\pm$ 1  | 99                                      | 0.005                         | T      |  | 15   | D/T/P                             | 16  | 335.00       | Variable high-frequency focus adjustment.                                      |       |
| PHILIPS          | LHH-1000(RI)   | 1 | 16-4X         | A                                  | F/B                                | HL/D/F   | 2-20 $\pm$ 0.1  | 101                                     | .0015                         | B      | B  | 20   | D/T/P/E                           | 62  | 4000.00      | Two chassis.   |       |
|                  | CDV488(RI)   | 1 | 16-4X         | A                                  | F                                  | HL/D/F   | 3-20 $\pm$ 0.5  | 97                                      | 0.003                         | B      | B  | 20   | D/T/P/E                           | 27  | 1300.00      | CD/CD-V combi player.  |       |
|                  | CD-960(RI)   | 1 | 16-4X         | A                                  | F                                  | HL/D/F   | 2-20 $\pm$ 0.1  | 101                                     | .0015                         | B      | B  | 20   | D/T/P/E                           | 21  | 999.00       |  |       |
|                  | CD-80(RI)  | 1 | 16-4X         | A                                  | F/V                                | HL/D/F   | 2-20 $\pm$ 0.1  | 101                                     | .0015                         | B      | B  | 20   | D/T/P/E                           | 20  | 749.00       | Bit-stream D/A conversion; Favorite Track Selection.                           |       |
|                  | CD-840(RI)   | 1 | 1             | A                                  | F/V                                | H/D  | 20-20 $\pm$ 0.1   |   |                               | B      | B  | 20   | D/T/P/E                           | 11  | 599.00       | Favorite Track Selection.  |       |
|                  | CD-60(RI)  | 1 | 16-4X         | A                                  | F/V                                | HL/D/F   | 20-20 $\pm$ 0.1   | 100                                     | 0.002                         | B      | B  | 20   | D/T/P/E                           | 11  | 429.00       | As above.  |       |
|                  | CD-50(RI)  | 1 | 16-4X         | A                                  | F/V                                | H/D  | 20-20 $\pm$ 0.1   | 98                                      | 0.005                         | B      | B  | 20   | D/T/P/E                           | 10  | 329.00       | As above; changer.   |       |
| (Continued)      | CDC875(RI)   | 6 | 16-4X         | A                                  | F/V                                | H/D  | 20-20 $\pm$ 0.1   | 100                                     | 0.002                         | B      | B  | 32   | D/T/P/E                           | 14 1/2  | 479.00       |  |       |



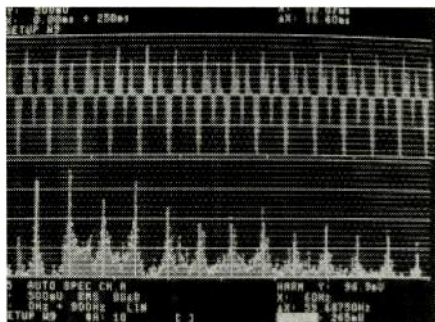
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***Not all vibration control materials are created equal.***

Developed by Sims Vibration Dynamics. The **NAVCOM™** Silencers dampen the unwanted vibrations that effect compact disc players, turntables, amplifiers and other sensitive audio components. The Silencers' unique energy absorption material, **NAVCOM™**, reduces the transmission of vibrations throughout the listening frequency band width from 10 to 30,000hz.



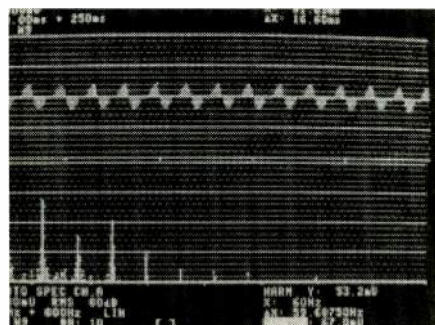
The internal as well as external vibration isolation from the Silencers allows the component to process pure audio signals rather than the false input of mechanical energy. Reducing the transmission of mechanical energy results in less distortion and this means an increase in focus and clarity from the highest highs to the lowest lows.



B & K reference test of vibration effects without isolation.

Results from a B & K 2032 FFT Spectrum Analyzer represent suppression of vibration measured in G forces. The first graph is a reference, run with no isolation whatsoever. You can see the prominent spikes in both the time and frequency domains. They measure 265 milligravities. The other test presented here was for **NAVCOM™**, and it shows suppression of vibration all the way down to 67 milligravities.

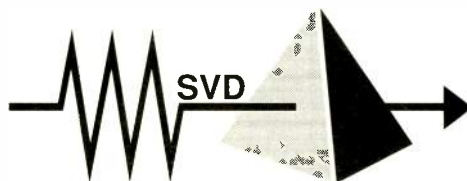
"It was a rare and pleasant experience to encounter an accessory device whose sonic contributions were backed up by measured data."—Bert Whyte "Behind the Scenes", AUDIO MAGAZINE July 1989.



B & K test of vibration effects using Sims NAVCOM™ damping material.

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And superior imaging, clarifying the placement of each instrument in an orchestra.

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# CD PLAYERS & D/A CONVERTERS

| MANUFACTURER           | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional   |  | Disc Capacity  | Decoding System:<br>Number of Bits  | Output Filter:<br>Analog Plus Digital = A,<br>Digital Only = B, Analog Only = C      | Line Outputs:<br>Fixed = F, Var. = V, Balanced Analog = B            | Other Outputs:<br>Headphone = H,<br>Headphone with Level Control = HL,<br>Subcode Only = S, Digital = D, Fiber Optic = F     | Frequency Response, Hz to kHz, $\pm$ dB   | S/N Ratio, "A" Wtd., $\pm$ dB   | THD, %  | Elapsed Time Display:<br>From Disc Start = D,<br>From Track Start = T, Both = S   | Repeat Time Display:<br>From Disc Start = D,<br>To Track End = T, Both = S                               | Number of Programmable Selections  | Repeat Functions:<br>Entire Disc = D, Track = T,<br>A & B Phrase = P, Entire Program = E | Weight, Lbs.  | Price, \$  | Notes |
|------------------------|--|--|--|---|--|--|--|---|---|---|---|--|--|--|---|--|-------|
| PHILIPS<br>(Continued) | CDV487(RI)<br>DAC960   | 1  | 16-4X<br>16-4X   | A<br>A  | F<br>V/B   | HL/D<br>HL/D/F   | 3-20 $\pm$ 0.5<br>2-20 $\pm$ 0.1   | 97<br>101   | 0.003<br>.0015  | B<br>B  | B<br>B  | 20<br>19   | D/T/P/E<br>19  | 949.00<br>999.00   | CD/CD-V combi player.<br>D/A converter; absolute polarity switch.   |  |       |
| PIONEER                | PD-M710(RI)<br>PD-M610(RI)<br>PD-M510(RI)<br>PD-M410(RO)<br>PD-T503(RI)<br>PD-T403(RI)<br>PD-T303(RO)<br>PD-4350(RI)<br>PD-4300(RO)<br>PD-6300(RI)<br>PD-7300(RI)<br>Elite PD-71(RI)<br>CLD-3070(RI)<br><br>CLD-1070(RI)<br>CLD-2070(RI)<br>Elite CLD-91(RI) | 6<br>6<br>6<br>6<br>2<br>2<br>2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 18-8X<br>18-8X<br>16-4X<br>16-4X<br>16-4X<br>16-4X<br>16-4X<br>16-4X<br>16-4X<br>18-8X<br>18-8X<br>18-8X<br>16-4X<br>16-4X<br>16-4X<br>16-4X | A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A | F/V<br>F/V<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F/V<br>F/V<br>F<br>F<br>F<br>F<br>F | HL/D/F<br>HL<br><br>HL<br><br>HL/D/F<br>D/F<br>F<br><br>HL<br>F<br>F | 2-20<br>4-20<br>4-20<br>4-20<br>4-20<br>4-20<br>4-20<br>4-20<br>4-20<br>2-20<br>2-20<br>2-20<br>4-20<br>5-20<br>4-20<br>2-20 | 110<br>104<br>102<br>102<br>104<br>102<br>102<br>102<br>102<br>110<br>104<br>112<br>100<br>100<br>104 | .0025<br>0.005<br><br><br><br><br><br><br><br>.0035<br>.0025<br>0.002 | B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B | B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B | 40<br>32<br>32<br>32<br>24<br>24<br>20<br>20<br>20<br>24<br>24<br>24<br>24<br>24<br>20<br>20<br>24<br>24 | D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/P<br>D/T/P<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E | 12<br>11<br>10<br>10<br>9<br>9<br>9<br>8<br>8<br>9<br>13<br>21<br>24<br>16<br>23<br>29   | 650.00<br>480.00<br>390.00<br>365.00<br>330.00<br>300.00<br>280.00<br>270.00<br>250.00<br>390.00<br>550.00<br>850.00<br>1200.00<br><br>600.00<br>1000.00<br>2000.00 | Changer.<br>As above.<br>As above.<br>As above.<br>Two disc trays.<br>As above.<br>As above.<br><br>Combination CD/<br>videodisc player.<br>As above.<br>As above. |       |
| PRECISION<br>AUDIO     | DIVC 880(RI)<br>DIVC 582(RI)<br>PADP1<br>D1  | 1<br>1   | 16-4X<br>16-4X<br>18-8X  | A<br>A<br>A   | F<br>F<br>F  | HL/D/F<br>H  | 20-20 $\pm$ 0.15<br>20-20 $\pm$ 0.15<br>20-20 $\pm$ 0.15<br>20-20 $\pm$ 0.15   | 105<br>105<br>110<br>105  | .0015<br>.0015<br>.0015<br>.0015                                      | B<br>B  | B<br>B  | 20<br>16   | D/T/P/E<br>D/T/E   | 22<br>16   | 1299.99<br>849.99<br>1199.99<br>450.00  | D/A converter.<br>Upgrade.   |       |
| PROTDN                 | AC-620(RI)<br><br>AC-300(RI)   | 1<br><br>1   | 16-4X<br><br>16-4X   | A<br><br>B  | F/V<br><br>F   | HL<br><br>HL   | 20-20 $\pm$ 0.3<br><br>20-20 $\pm$ 0.3   | 100<br><br>96   | 0.003<br><br>0.003  | B<br><br>B  | B<br><br>B  | 20<br><br>20   | D/T/P/E<br><br>D/T/P/E   | 17.2<br><br>7.9  | 700.00<br><br>430.00  | Random play; intro<br>scan; motorized<br>control panel.  |       |
| PS AUDIO               | Digital Link   |  | 18-8X  | A   | F  |  | 20-20 $\pm$ 0.2  | 100   | 0.001   |   |   |  |  | 12   | 1195.00   | D/A converter.   |       |
| QUASAR                 | CD8949(RO)<br>CD8988(RI)<br>CD8989(RI)<br>CD8959(RI)   | 1<br>6<br>5<br>1   | 16-4X<br>16-4X<br>16-4X<br>16-4X   | B<br>B<br>B<br>B  | F<br>F<br>F<br>F   | <br><br>HL   | 2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5  | 96<br>96<br>96<br>96  | 0.006<br>0.006<br>0.006<br>0.004                                      | T<br>T<br>T<br>T  |   | 20<br>36<br>20<br>18   | D/T/E<br>D/T/E<br>D/T/E<br>D/T/E   | 8<br>13<br>9<br>3/4  | 249.00<br>399.00<br>349.00<br>269.00  | Changer.<br>As above.<br>As above.<br>Portable.  |       |
| RADFORD                | WSCDI(RI)<br>WSCDT(RI)<br>WSDA   | 1<br>1   | 16-4X<br>16-4X   |   |  |  |  |   |   |   |   |  |  |  | 1649.00<br>1495.00<br>775.00  | Tube analog stages.<br>CD transport only.<br>D/A converter; tube<br>analog stages.   |       |
| REVOX                  | B226-S(RO)<br>B126(RO)   | 1<br>1   | 16-4X<br>16-4X   | B<br>B  | F/V<br>F/V   | HL/D/F<br>D/F  | 20-20 $\pm$ 0.1<br>20-20 $\pm$ 0.1   | 100<br>100  | 0.005<br>0.005  | B<br>B  | B<br>B  | 19<br>19   | D/T/P/E<br>D/T/P/E   | 18 1/2<br>18 1/2   | 1895.00<br>1275.00  |  |       |
| ROTEL                  | RCD855(RI)   | 1  | 16-4X  | A   | F  | D  | 20-20 $\pm$ 0.05   | 100   | .0025   | T   |   | 20   | D/T  | 16   | 349.00  |  |       |
| SAE                    | D102(RI)   | 1  | 16-4X  | A   | F/V  | HL/S   | 2-20 $\pm$ 0.3   | 100   | 0.003   | T   |   | 20   | D/T/P/E  | 20   | 599.00  | Cueing; remote has<br>volume control.  |       |
| SANSUI                 | Vintage<br>CD-X711(RI)<br>Vintage<br>CD-X501i(RI)<br>CD-X510M(RI)<br><br>CD-X311(RI)<br><br>CD-X301i(RI)<br>CD-V1000<br>CD-X105(RI)  | 1<br>1<br>12<br>1<br>1<br>1<br>1<br>1<br>1   | 1<br>16-4X<br>16<br>16<br>1<br>1<br>16-2X<br>16<br>16  | <br>A<br>A<br>A<br><br>A<br><br>A<br>A<br>A                                       | B<br>F<br>F<br>F<br><br>F<br><br>F<br>F<br>F   | HL/D/F<br>HL/D<br>HL<br><br>HL/D<br><br>HL<br>F<br>F                 | 0-20 $\pm$ 0.3<br>4-20 $\pm$ 0.3<br>5-20<br>4-20<br><br>4-20<br>5-20<br>5-20<br>20-20  | 103<br>106<br>100<br>100<br><br>100<br>100<br>100<br>90   | 0.003<br>0.003<br>0.03<br>0.006<br><br>0.03<br>0.003<br>0.003<br>0.03 | B<br>B<br>B<br>B<br><br>B<br>B<br>B<br>B  | B<br>B<br>B<br>B<br><br>B<br>B<br>B<br>B  | 20<br>20<br>30<br>20<br><br>20<br>24<br>20   | D/T/P/E<br>D/T/P/E<br>D/T/E<br>D/T<br><br>D/T/E<br>D/T<br>D/T  | 20<br>12<br>16 1/2<br>9 3/4<br><br>8 3/4<br>10 3/4<br>7 3/4                              | 1100.00<br>600.00<br>630.00<br>500.00<br><br>330.00<br>320.00<br>260.00   | One-bit D/A converter.<br><br>Two-magazine<br>changer.<br>One-bit D/A converter;<br>timer play.  |       |
| SANYO                  | CP820<br>CP860(RI)<br>CPM900(RI)   | 1<br>1<br>10   | 16-2X<br>16-2X<br>16-2X  | A<br>A<br>A   | F<br>F<br>F  | <br>HL   | 5-20<br>5-20<br>5-20   | 103<br>103<br>103   | 0.03<br>0.03<br>0.03  | T†<br>T<br>T  |   | 16<br>16<br>32   | D/E<br>D/E<br>D/E  | 7.5<br>7.5<br>12.4   | 169.99<br>279.99  | †During search mode.<br>Changer.   |       |
| SCOTT                  | DA 970(RI)<br>DA 980(RI)<br>DA 990(RI)<br>DA 1000(RI)  | 1<br>1<br>1<br>2   | 16<br>16<br>16<br>16   | A<br>A<br>A<br>A  | F<br>F<br>F<br>F   | <br>H<br>HL<br>HL  | 5-20<br>5-20<br>4-20 $\pm$ 0.5   | 95<br>95<br>96  | 0.03<br>0.03<br>0.01<br>0.03  | B<br>B<br>B<br>B  |   | 15<br>15<br>20<br>30   | D/T/P/E<br>D/T/P/E<br>D/T/P/E<br>D/T/P/E   |  |   | Two disc trays.  |       |
| SHARP                  | DX-670<br>DX-R770(RI)<br>DX-R790(RI)<br>DX-R820(RI)<br>DX-R830(RI)<br>MV-D100(RI)  | 1<br>1<br>1<br>1<br>1<br>5   | 16-2X<br>16-2X<br>16-2X<br>16-8X<br>16-8X<br>18-8X   | A<br>A<br>A<br>A<br>A<br>A  | F<br>F<br>F<br>F<br>F<br>F/V   | D<br>D<br>D<br>D<br>D<br>F/V   | 5-20 $\pm$ 3<br>5-20 $\pm$ 3<br>5-20 $\pm$ 3<br>5-20 $\pm$ 3<br>5-20 $\pm$ 3   | 90<br>90<br>90<br>100<br>100  | 0.05<br>0.05<br>0.05<br>0.005<br>0.005                                | T<br>T<br>T<br>T<br>T   |   | 20<br>20<br>20<br>20<br>20<br>20   | D/T/E<br>D/T/E<br>D/T/E<br>D/T/E<br>D/T/E  | 6.2<br>6.2<br>6.2<br>6.2<br>6.2  | 229.95<br>269.95<br>299.95<br>339.95<br>409.95  | Changer.   |       |
| SHERWOOD               | CD-1060C(RO)<br>CD-1180C(RO)<br>CD-1182R(RI)<br>CDM-1260R(RI)  | 1<br>1<br>1<br>6   | 16-4X<br>16-8X<br>16-8X<br>16-4X   | A<br>A<br>A<br>A  | F<br>F<br>F<br>F   | H<br>HL<br>HL<br>F   | 2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5  | 93<br>95<br>95<br>91  | 0.07<br>0.004<br>0.004<br>0.01  | B<br>B<br>B<br>B  | B<br>B<br>B<br>B  | 16<br>16<br>16<br>32   | D/T/P/E<br>D/T/P/E<br>D/T/P/E<br>D/T/P/E   | 10 5/8<br>10 5/8<br>11<br>11 1/2   | 199.95<br>229.95<br>249.95<br>329.95  | Random play.<br>As above.<br>Changer.  |       |
| SONOGRAPHE             | SD18(RO)   | 1  | 14-4X  | A   | F  | H  | 5-15 $\pm$ 0.25  |   |   | T   |   |  | D/T/E  | 8 1/2  | 795.00  |  |       |
| SONY                   | CDP-970(RI)<br><br>CDP-770(RI)<br>CDP-670(RI)<br>CDP-470(RI)   | 1<br><br>1<br>1<br>1   | 18-8X<br><br>16-8X<br>16-8X<br>16-4X   | A<br><br>A<br>A<br>A  | V<br><br>F<br>F<br>F   | HL/D/F<br><br>HL/D/F<br>HL/D/F<br>HL                                 | 2-20 $\pm$ 0.3<br><br>2-20 $\pm$ 0.3<br>2-20 $\pm$ 0.5<br>2-20 $\pm$ 1   | 110<br><br>102<br>100<br>100  | 0.003<br><br>0.003<br>0.008<br>0.09                                   | T<br><br>T<br>T<br>T  | B<br><br>B<br>B<br>B  | 20<br><br>20<br>20<br>20   | D/T/P/E<br><br>D/T/P/E<br>D/T/P/E<br>D/T/P/E   | 11<br><br>8<br>7 3/4<br>7 3/4  | 500.00<br><br>350.00<br>295.00<br>240.00  | Custom File<br>programming.  |       |
| (Continued)            |  |  |  |   |  |  |  |   |   |   |   |  |  |  |   |  |       |



# LUXMAN

AT HOME IN THE 90's





## Home Entertainment in the 90's. . .

Several trends have emerged from the 80's:

- *The overall cost of owning a home in the United States has continued to soar.*
- *The admission price of concerts, movies and sporting events has continued to escalate.*
- *And, the performance quality and operating convenience of home audio and video components has dramatically improved.*

Entering the 90's these three factors will combine to fuel an increasing enthusiasm to entertain "at home." Simply stated, it has become more practical and more desirable to invest in high quality audio/video systems that deliver a whole new dimension in "home entertainment." With the proper combination of audio and video components, you can:

- *Enjoy music as if you were attending a "live" concert.*
- *Experience films like you do in a movie theatre.*
- *Observe sporting events as if you were at the stadium.*

Virtually every type of "live" entertainment can be faithfully reproduced in the home of the 90's, providing you design a system tailored to your individual needs.

## Luxman Home Audio Components. . .

There are two basic elements of a home entertainment system:

**Picture** - Several manufacturers concentrate on improving picture quality with advanced technology in the area of large-screen televisions, Laserdisc video players, V.C.R's, and soon, high-definition picture screens.

**Sound** - Luxman audio components satisfy the "sonic requirements of each system and deliver the emotional impact of the original performance.

Every component is carefully designed to meet three performance criteria:

**Sonic Realism** - All efforts are made to reproduce music with all of the warmth and transparency of the original source.

**Ease of Operation** - Each component is designed for optimum convenience, both on the control panel and on the remote handpiece.

**Long-Term Reliability** - Every model incorporates proven circuit designs and exhaustive quality evaluations to provide uncompromising durability.

The trend towards high-quality home entertainment systems is a focal point in the 90's, and the audio components are the heart of each system. That's why Luxman is *at home* in the 90's.



## Luxman at home in the 90's

### ... in every room

The Luxman remote controlled receivers (R-115, R-117) and preamplifier (TP-117) include a handpiece that operates all Luxman CD players and cassette decks, eliminating the need for multiple remotes. And these system control centers are equipped to feed information to any part of the house, enabling multiple-room enjoyment of both audio and video sources.

For example, a remote sensor eye (RC-501) can be installed in another part of the house, allowing you to run speaker wires to an extra pair of speakers and operate the entire system in that room.

This eliminates the need for another complete audio system in that listening area. And with a relatively simple procedure for running cable through the house, you can ultimately carry your handpiece into any room and turn the main system on and off, adjust volume, change radio stations, fast forward a compact disc, and more.

### ... and in every wall

The S-505 loudspeakers bring true high-fidelity sound to any wall or ceiling installation. Designed primarily for home entertainment rooms, S-505 loudspeakers are also moisture resistant and work well in the higher humidity of a kitchen, bathroom ... any place where in-wall speakers are desired. The grille accommodates the RC-501 sensor eye for easy "hidden" installation and can be painted to match any environment.



**S-505** Wall Mount Loudspeakers w/hidden sensor eye



*Each room in your home can connect to the main system with S-505 speakers, eliminating the need for another audio system in that room.*

### ... introducing "multi-zone" remote

For the ultimate multi-room installation, the TP-117 "multi-zone" preamplifier adds the extra convenience of independent source select.

Most multiple room combinations have a limitation: The source selected in one room must be fed to all rooms simultaneously. "Independent source select" means that you can listen to a compact disc in the bedroom, while someone else plays the radio in the living room, independent of each other.

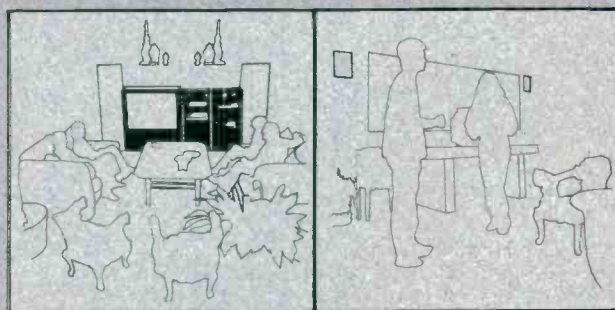
With the proper connections, the video signal coming from the main system can also travel down the same cables

used for basic "multi-room" installation. This enables remote televisions to receive the video signals from the main V.C.R. or Laserdisc player.

With a command repeater (RC-503), the handpiece of each video component can "talk" to the remote eyes, enabling complete remote operation at each location. Whether used for music only, or integrated with a video system, Luxman components offer convenience, flexibility, and the most accurate sonic reproduction available today.



**RC-503** Command Repeater

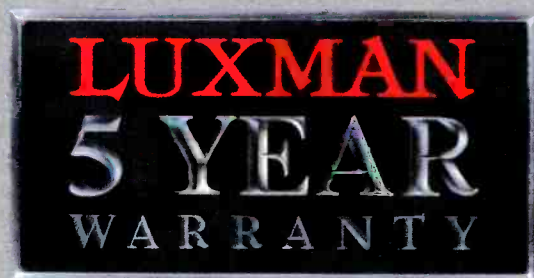


*The TP-117 "multi-zone" preamplifier can feed all audio or video sources to any room for total independent operation.*



Luxman is one of the most sophisticated and technically advanced audio product lines on the market today. With more than sixty years of experience in designing and producing audio products, we have made a number of innovative technological achievements. The end result is an international reputation for home audio components with musical warmth and transparency.

Luxman is committed to providing the highest quality product, but this is only a part of our total commitment. Every effort is made to ensure that our product will give valued customers the highest level of satisfaction for many years to come. That is why *all* Luxman home audio components are backed by the longest full-line warranty in the industry: 5 years parts and labor.



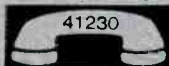
You will also find that the retailers that carry Luxman parallel this commitment to offer only the finest products with complete customer service. Should you need assistance or service on a Luxman component, just contact your local Luxman dealer.

For additional information on these and other Luxman components, or the authorized dealer nearest you:

CALL  
1-800-4-LUXMAN

Enter No. 3 on Reader Service Card

For More Information



Call 1-800-553-4355

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Note: Due to continuing product improvement, specifications and design are subject to change without notice.

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# CD PLAYERS & D/A CONVERTERS

| MANUFACTURER                 | Model<br>(RI) = Remote Included;<br>(RO) = Remote Optional | Disk Capacity | Decoding System:<br>Number of Bits | Over-sampling Rate | Output Filter: Analog Plus Digital = A;<br>Digital Only = B; Analog Only = C | Line Outputs: Fixed = F; Var = V; Balanced Analog = B | Other Outputs: Headphone = H;<br>Headphone with Level Control = HL;<br>Subcode Only = S; Digital = D; Fiber Optic = F | Frequency Response, Hz to kHz, $\pm$ dB | S/N Ratio, "A" Wtd., $\pm$ dB | THD, % | Elapsed Time Display: From Disc Start = 0;<br>From Track Start = T; Both = B | Remaining Time Display: To Disc End = 0;<br>To Track End = T; Both = B | Number of Programmable Selections | Repeat Functions: Entire Disc = D; Track = T;<br>A-B Phrase = P; Entire Program = E | Weight, Lbs.   | Price, \$  | Notes |
|------------------------------|--|---------------|------------------------------------|--------------------|--|---|---|---|-------------------------------|--------|--|--|-----------------------------------|---|--|--|-------|
| SONY<br>(Continued)          | CDP-270(RO)  | 1             | 16-4X                              | A                  | F  | HL  | 2-20 $\pm$ 1  | 100                                     | 0.09                          | T      | B  | 20   | D/T/P/E                           | 7 3/4   | 225.00   | Changer.<br>As above; Custom<br>File.<br>As above.<br>Changer.<br>As above.<br>Portable with digital<br>signal processing<br>control.<br>As above.<br>As above; bass-<br>enhancement circuit.<br>Portable, includes<br>AM/FM tuner; without<br>tuner, Model D-2,<br>\$200.00.<br>Portable. |       |
|                              | CDP-C900(RI)   | 10            | 16-8X                              | A                  | F  | HL/D/F  | 2-20 $\pm$ 0.3  | 105                                     | 0.004                         | T      | B  | 32   | D/T/E                             | 14  | 470.00   |  |       |
|                              | CDP-C800(RI)   | 5             | 16-8X                              | A                  | V  | HL/D/F  | 2-20 $\pm$ 0.3  | 105                                     | 0.003                         | T      | B  | 32   | D/T/E                             | 13 3/4  | 500.00   |  |       |
|                              | CDP-C700(RI)   | 5             | 16-8X                              | A                  | F  | HL  | 2-20 $\pm$ 0.3  | 105                                     | 0.004                         | T      | B  | 32   | D/T/E                             | 12  | 400.00   |  |       |
|                              | CDP-C500(RI)   | 5             | 16-4X                              | A                  | F  | HL  | 2-20 $\pm$ 1  | 100                                     | 0.05                          | T      | B  | 32   | D/T/E                             | 10 3/4  | 330.00   |  |       |
|                              | CDP-C400(RO)   | 5             | 16-4X                              | A                  | F  | HL  | 2-20 $\pm$ 1  | 100                                     | 0.05                          | T      | B  | 32   | D/T/E                             | 10 3/4  | 300.00   |  |       |
|                              | D-555(RO)  | 1             | 16-8X                              | A                  | F  | HL/D/F  | 20-20 $\pm$ 1   | 90                                      | 0.008                         | T      | B  | 22   | D/T/P/E                           | 1 1/2   | 450.00   |  |       |
|                              | D-25(RI)   | 1             | 16-4X                              | A                  | F  | HL  | 20-20 + 1, -3   | 85                                      | 0.008                         | T      | B  | 22   | D/T/P/E                           | 1   | 350.00   |  |       |
|                              | D-180K(RO)   | 1             | 16-2X                              | A                  | F  | HL  | 20-20 + 1, -3   | 85                                      | 0.008                         | T      | B  | 22   | D/T/P/E                           | 1 1/2   | 270.00   |  |       |
| D-9(RO)                      | 1  | 16-2X         | A                                  | F                  | HL   | 20-20 + 1, -3   | 85  | 0.008                                   | T                             | B      | 22   | D/T/P/E  | 1 1/4                             | 250.00  |  |  |       |
| D-T2(RO)                     | 1  | 16-2X         | A                                  | F                  | HL   | 20-20 + 1, -3   | 85  | 0.07                                    | T                             | B      |  | D/T/E  | 1                                 | 250.00  |  |  |       |
| D-88(RO)                     | 1  | 16-2X         | A                                  | F                  | HL   | 20-20 + 1, -3   | 85  | 0.07                                    | T                             | B      |  | D/T/E  | 7/8                               | 360.00  |  |  |       |
| SONY ES                      | CDP-R1/DAS-R1(RI)  | 1             | 18-8X                              | A                  | F  | S/D/F   | 10-20 + 0, -0.5   | 110                                     | .0025                         | T      | B  | 20   | D/T/P/E                           | 75  | 8000.00  | Two chassis.<br><br><br><br><br>Changer. †24<br>selections per disc;<br>Custom File<br>programming.<br>Changer; Custom File.<br>As above.  |       |
|                              | CDP-X7ESD(RI)  | 1             | 18-8X                              | A                  | V/B  | HL/S/D/F  | 2-20 $\pm$ 0.3  | 115                                     | .0015                         | T      | B  | 20   | D/T/P/E                           | 37 1/2  | 2000.00  |  |       |
|                              | CDP-608ESD(RI)   | 1             | 18-8X                              | A                  | V  | HL/S/D/F  | 2-20 $\pm$ 0.3  | 113                                     | .0022                         | T      | B  | 20   | D/T/P/E                           | 25 1/4  | 900.00   |  |       |
|                              | CDP-508ESD(RI)   | 1             | 18-8X                              | A                  | V  | HL/D/F  | 2-20 $\pm$ 0.3  | 110                                     | 0.003                         | T      | B  | 20   | D/T/P/E                           | 14 1/4  | 550.00   |  |       |
|                              | CDP-208ESD(RI)   | 1             | 16-8X                              | A                  | V  | HL/D/F  | 2-20 $\pm$ 0.3  | 102                                     | 0.003                         | T      | B  | 20   | D/T/P/E                           | 9   | 380.00   |  |       |
|                              | CDP-C15ESD(RI)   | 10            | 18-8X                              | A                  | V  | HL/S/D/F  | 2-20 $\pm$ 0.3  | 115                                     | .0025                         | T      | B  | 20   | D/T/E                             | 14 1/2  | 800.00   |  |       |
|                              | CDP-C9ESD(RI)  | 10            | 18-8X                              | A                  | F  | HL/D/F  | 2-20 $\pm$ 0.3  | 105                                     | 0.003                         | T      | B  | 20   | D/T/E                             | 14  | 500.00   |  |       |
| CDP-C8ESD(RI)                | 5  | 18-8X         | A                                  | V                  | HL/D/F   | 2-20 $\pm$ 0.3  | 105   | .0025                                   | T                             | B      | 32   | D/T/E  | 15 1/2                            | 500.00  |  |  |       |
| SOUND-CRAFTSMEN              | CD750(RI)  | 1             |                                    | A                  | F  | HL  | 5-20 $\pm$ 0.5  | 100                                     | 0.005                         | T      |  | 15   | D/T/P/E                           | 16  | 599.00   | Includes compander;<br>17-inch-wide version<br>available.  |       |
| SOUNDESIGN                   | 4928   | 1             | 16-2X                              | C                  | F  | HL  | 20-20 $\pm$ 3   | 80                                      | 0.5                           | T      | D  | 16   | D/T                               |   | 199.95   | Portable; includes<br>headphones, battery<br>recharger, and a.c.<br>adaptor.   |       |
| SOUND ENGINEERING            | PFM-1M   | 1             | 16-4X                              | A                  | F  | D   | 0-20 + 0, -2  | 112                                     | 0.003                         | T      |  | 20   | D/T/E                             | 16  | 1100.00  |  |       |
|                              | PFM-1R   | 1             | 16-4X                              | A                  | F  | D   | 0-20 + 0, -2  | 110                                     | 0.004                         | T      |  | 20   | D/T/E                             | 16  | 1250.00  |  |       |
| SPECTRAL AUDIO               | SDR-1000<br>Digital<br>Reference(RO)                       | 1             |                                    | A†                 | V  |   | 5-20 $\pm$ 0.1  | 106                                     | 0.003                         | B      | B  |  |                                   | 49  | 7895.00  | †Selectable output<br>filters. Combination<br>CD player/preamp.  |       |
| SYLVANIA                     | CD-1490(RO)  | 1             | 16                                 | C                  | F  | H   | 2-20 $\pm$ 0.5  | 90                                      | 0.02                          | T      |  | 20   | D/E                               | 9   | 169.95   |  |       |
|                              | CD-1494(RO)  | 6             | 16                                 | C                  | F  | H   | 2-20 $\pm$ 0.5  | 90                                      | 0.02                          | T      |  | 30   | D/E                               | 11  | 269.95   | Changer.   |       |
| SYMPHONIC                    | CD-2000A(RI)   | 1             | 16-1X                              | A                  | F  | HL/S  | 20-20 $\pm$ 2   | 90                                      | 0.01                          | T      |  | 16   | D/T/E                             | 8.6   | 299.95   |  |       |
|                              | CD-3000A(RI)   | 6             | 16-2X                              | A                  | F  | S   | 20-20 $\pm$ 2   | 90                                      | 0.01                          | T      |  | 32   | D/T/E                             | 11.4  | 399.95   | Changer.   |       |
| TANDBERG                     | TCP-3025A  | 1             | 16-4X                              | A                  | V/B  | HL  | 2-20 $\pm$ 0.3  | 100                                     | 0.008                         | B      | B  |  |                                   | 13  |  |  |       |
|                              | TCP-3035A(RI)  | 1             | 16-4X                              | A                  | F  | H   | 10-20 $\pm$ 0.5   | 100                                     | 0.01                          | D      |  |  | D                                 | 11 1/2  |  |  |       |
| TEAC                         | PD-165   | 1             | 16-4X                              | B                  | F  |   | 5-20 $\pm$ 1  | 90                                      | 0.005                         | T      | T  | 16   | D/T/E                             | 7   | 249.95   |  |       |
|                              | PD-440(RI)   | 1             | 16-4X                              | B                  | F  |   | 5-20 $\pm$ 1  | 90                                      | 0.005                         | T      | B  | 20   | D/T/E                             | 8.4   | 279.95   |  |       |
|                              | PD-445(RI)   | 1             | 16-4X                              | B                  | F  |   | 5-20 $\pm$ 1  | 90                                      | 0.005                         | T      | B  | 20   | D/T/E                             | 8.5   | 299.95   |  |       |
|                              | PD-480(RI)   | 1             | 16-8X                              | B                  | F  | H   | 2-20 $\pm$ 0.5  | 100                                     | 0.008                         | T      | D  | 20   | D/T/E                             | 8.4   | 399.95   |  |       |
|                              | PD-700M(RI)  | 6             | 16-4X                              | B                  | F  |   | 5-20 $\pm$ 1  | 93                                      | 0.01                          |        |  | 32   | D/T/E                             | 11.4  | 499.00   | Changer.   |       |
|                              |  |               |                                    |                    |  |   |   |   |                               |        |  |  |                                   |   |  |  |       |
| TECHNICS                     | SL-P1300(RI)   | 1             | 18-8X                              | A                  | F/B  | HL/D/F  | 2-20 $\pm$ 0.2  | 112                                     | 0.003                         | B      | B  | 20   | D/T/P/E                           | 35  | 1799.00  | Wired remote port;<br>search dial; audible<br>pause; rocker switch;<br>pitch control; one-<br>touch memory by time<br>code.  |       |
|                              | SL-P1200(RI)   | 1             | 16-2X                              | A                  | F  | HL/S  | 4-20 $\pm$ 0.1  | 106                                     | .0025                         | B      | B  | 20   | D/T/E                             | 32  | 1499.00  | Dual D/A converters;<br>search dial; audible<br>pause; rocker switch;<br>pitch control.  |       |
|                              | SL-PC30(RI)  | 5             | 16-4X                              | A                  | F  |   | 2-20 $\pm$ 1  | 96                                      | 0.05                          | B      | B  | 36   | D/T/E                             | 13  | 369.00   | Changer.   |       |
|                              | SL-PC20(RI)  | 5             | 16-4X                              | A                  | F  |   | 2-20 $\pm$ 1  | 96                                      | 0.05                          | B      | B  | 20   | D/T/E                             | 8 5/8   | 329.00   | As above; dual D/A<br>converters.  |       |
|                              | SL-PC10  | 5             | 16-4X                              | A                  | F  |   | 2-20 $\pm$ 1  | 96                                      | 0.05                          | B      | B  | 20   | D/T/E                             | 8 5/8   | 289.00   | As above.  |       |
|                              | SL-P999(RI)  | 1             | 20-8X                              | A                  | F  | HL/F  | 2-20 $\pm$ 0.3  | 113                                     | .0023                         | B      | B  | 32   | D/T/P/E                           | 13  | 599.00   | Four D/A converters.   |       |
|                              | SL-P555(RI)  | 1             | 18-4X                              | A                  | F/V  | HL/F  | 2-20 $\pm$ 0.3  | 100                                     | .0035                         | B      | B  | 32   | D/T/P/E                           | 11  | 409.00   | As above.  |       |
|                              | SL-P222(RI)  | 1             | 18-4X                              | A                  | F/V  | HL/F  | 2-20 $\pm$ 0.5  | 96                                      | 0.005                         | B      | B  | 20   | D/T/E                             | 8   | 289.00   | As above.  |       |
|                              | SL-P102(RI)  | 1             | 16-4X                              | A                  | F  | HL  | 2-20 $\pm$ 1  | 96                                      | 0.05                          | B      | B  | 20   | D/T/E                             | 8   | 219.00   | Dual D/A converters.   |       |
|                              | SL-P101  | 1             | 16-4X                              | A                  | F  |   | 2-20 $\pm$ 1  | 96                                      | 0.05                          | B      | B  | 20   | D/T/E                             | 8   | 199.00   | As above.  |       |
| SL-XP6(RI)                   | 1  | 16-4X         | A                                  | F/V                | HL   | 20-20 + 0.5, -1                                       | 88  | 0.008                                   | B                             |        | 18   | D/T/E  | 3/4                               | 379.00  | As above; portable;<br>includes rechargeable<br>batteries, a.c. adap-<br>tor, and earphones. |  |       |
| SL-XP2(RI)                   | 1  | 16-4X         | A                                  | F/V                | HL   |   |   |   |                               |        |  | D/T/E  | 3/4                               | 229.00  | As above.  |  |       |
| THETA DIGITAL<br>(Continued) | DS Pre   |               | 16-8X                              | A                  | F/V  | D   | 0-20 + 0, -0.1  | 104                                     | 0.002                         |        |  |  |                                   | 28  | 4000.00  | Preamp with D/A<br>conversion (see also<br>"Preamplifiers");<br>three chassis.   |       |



# AMPLIFIERS

| MANUFACTURER        | Model (H) = Remote Included, (R) = Remote Optional | Type: Integrated = I, Basic = B, Tube = T, Hybrid = H, Mono = M | Rated THD, % | Balanced Inputs? | Rated Slew Rate, V/μs | High Level Sensitivity, mV | Does Unit Invert Polarity? | Cont. Avg. Watts/Channel into 8 Ohms | Cont. Avg. Watts/Channel into 4 Ohms | Rated Full-Power Bandwidth, Hz to kHz | Class of Output Operation | POWER AMP            |                        |                      |                          | PREAMP                |              |           |              | Notes  |
|---------------------|--|---|--------------|------------------|-----------------------|----------------------------|----------------------------|--------------------------------------|--------------------------------------|---------------------------------------|---------------------------|----------------------|------------------------|----------------------|--------------------------|-----------------------|--------------|-----------|--------------|--|
|                     |  |   |              |                  |                       |                            |                            |                                      |                                      |                                       |                           | Dynamic Headroom, dB | Input Impedance, kOhms | MM Phono S.N. - ohms | MM Phono Sensitivity, mV | Moving Coil Input, mV | Weight, Lbs. | Price, \$ |              |  |
| CARVIN              | FET 400  | B   | 0.05         | Yes              | 30                    | 1V                         | No                         | 100                                  | 200                                  | 20-60                                 | AB                        |                      | 10                     |                      |                          |                       |              | 31        | 499.00       | Bridgeable; subsonic and ultrasonic filters; MOS-FET. As above.  |
|                     | FET 900  | B   | 0.05         | Yes              | 50                    | 1V                         | No                         | 200                                  | 300                                  | 20-60                                 | AB                        |                      | 10                     |                      |                          |                       |              | 35        | 669.00       |  |
| CARY AUDIO DESIGN   | DH-50  | B/T/M   |              |                  |                       | 750                        | No                         | 50                                   |                                      | 20-20                                 | A/AB                      |                      |                        |                      |                          |                       |              | 30        | 1295.00      | †1000 watts.   |
|                     | DH-100   | B/T/M   |              |                  |                       | 750                        | No                         | 100                                  |                                      | 16-24                                 | A/AB                      |                      |                        |                      |                          |                       |              | 35        | 2995.00      |  |
|                     | DH-300   | B/T/M   |              |                  |                       | 750                        | No                         | 300                                  |                                      | 16-24                                 | A/AB                      |                      |                        |                      |                          |                       |              | 45        | 4995.00      |  |
|                     | DH-500   | B/T/M   |              |                  |                       | 750                        | No                         | 500                                  |                                      | 16-24                                 | A/AB                      |                      |                        |                      |                          |                       |              | 55        | 6995.00      |  |
|                     | DH-1000  | B/T/M   |              |                  |                       | 750                        | No                         | †                                    |                                      | 16-24                                 | A/AB                      |                      |                        |                      |                          |                       |              | 70        | 9995.00      |  |
| CELLO               | Performance  | B/M   |              | Yes              |                       |                            |                            |                                      |                                      |                                       |                           |                      |                        |                      |                          |                       |              |           | 16,000. Pair | Four chassis. Dual mono.   |
|                     | Encore   | B   |              | Yes              |                       |                            |                            |                                      |                                      |                                       |                           |                      |                        |                      |                          |                       |              |           | 6000.00      |  |
| CLASSÉ AUDIO        | DR-8   | B   | 0.01         | Yes              |                       | 900                        | No                         | 70                                   | 140                                  | 0.5-80                                | A/AB                      | 5                    | 100                    |                      |                          |                       |              | 53        | 2395.00      | Bridges to 280 watts into 8 ohms and 550 watts into 4 ohms. As above but 400 and 800 watts. As above but 100 and 200 watts. As above but 180 and 360 watts.      |
|                     | DR-9   | B   | 0.01         | Yes              |                       | 1V                         | No                         | 100                                  | 200                                  | 0.5-80                                | A/AB                      | 5                    | 100                    |                      |                          |                       |              | 65        | 3495.00      |  |
|                     | DR-3B  | B   | 0.01         | No               |                       | 800                        | No                         | 25                                   | 50                                   | 0.5-80                                | A                         | 8                    | 100                    |                      |                          |                       |              | 75        | 3195.00      |  |
|                     | DR-3VHC  | B   | 0.01         | No               |                       | 800                        | No                         | 45                                   | 90                                   | 0.5-80                                | A                         | 8                    | 100                    |                      |                          |                       |              | 105       | 4495.00      |  |
| CLASSIC AUDIO LTD.  | CA260  | B/H   | 0.1          | No               |                       | 775                        | No                         | 50                                   | 50                                   | 20-20                                 | AB1                       | 1.5                  | 100                    |                      |                          |                       |              | 66        | 1299.00      | Bridgeable. †Pro version has balanced inputs. As above; MOS-FET. As above.   |
|                     | Moscode 301  | B/H   | 0.05         | †                |                       |                            | No                         | 150                                  | 225                                  | 20-20                                 | A/AB                      | 1.5                  | 100                    |                      |                          |                       |              | 40        | 1699.00      |  |
|                     | Moscode 601 Mono Block                             | B/H/M   |              | †                |                       |                            | No                         | 325                                  | 500                                  | 20-20                                 | AB                        | 1.5                  | 100                    |                      |                          |                       |              | 55        | 3299.00      |  |
| DON J. COCHRAN      | Delta Mode   | B/H/M   | 0.07         | Yes              | 65                    | 1.6V                       | No                         | 200                                  | 200                                  | 0.5-50                                |                           | 0.4                  | 50                     |                      |                          |                       |              | 58        | 10,000. Pair | Differential signal path; balanced bridge output.  |
| CONRAD-JOHNSON      | MF80   | B   | 0.5          |                  |                       |                            |                            | 80                                   |                                      | 20-20                                 | AB                        |                      | 100                    |                      |                          |                       |              | 38        | 1395.00      |  |
|                     | MV50   | B/T   | 1            |                  |                       |                            |                            | 45                                   |                                      | 20-20                                 |                           |                      | 100                    |                      |                          |                       |              | 39        | 1685.00      |  |
|                     | MV100  | B/T   | 1            |                  |                       |                            |                            | 90                                   |                                      | 20-20                                 |                           |                      | 100                    |                      |                          |                       |              | 80        | 2950.00      |  |
|                     | Premier 18   | B/T   | 1            |                  |                       |                            |                            | 150                                  |                                      | 20-20                                 |                           |                      | 100                    |                      |                          |                       |              | 135       | 5750.00      |  |
|                     | VTF200   | B/H   | 1            |                  |                       |                            |                            | 200                                  |                                      | 20-20                                 |                           |                      | 100                    |                      |                          |                       |              | 125       | 4995.00      |  |
| COUNTERPOINT        | SA-100   | B/H   | 0.8          | No               |                       |                            | No                         | 100                                  | 170                                  | 5-100                                 | AB                        | 3                    | 100                    |                      |                          |                       |              |           | 1195.00      |  |
|                     | SA-220   | B/H   | 0.5          | No               |                       |                            | No                         | 220                                  | 420                                  | 1.2-200                               | AB                        | 3                    | 100                    |                      |                          |                       |              |           | 2495.00      |  |
|                     | SA-220/220   | B/H/M   | 0.5          | No               |                       |                            | No                         | 600                                  | 700                                  | 1.2-200                               | AB                        | 3                    | 100                    |                      |                          |                       |              |           | 4990.00      |  |
|                     | SA-4   | B/H/M   | 0.2          | No               | 6                     |                            | No                         | 140                                  | 96                                   | 1-100                                 | AB Var.                   | 3                    | 100                    |                      |                          |                       |              |           | 6095.00      |  |
| CREEK               | 4040S2   | I   | 0.01         | Yes              | 150                   | 250                        | No                         | 40                                   | 50                                   | 20-20                                 | AB                        | 1                    |                        | 75                   | 2.5                      | 350                   | No           | 10        | 450.00       | 100-μV sensitivity and 1-kilohm loading for MC input. Bridges to 200 watts.  |
|                     | 4140S2   | I   | 0.01         | Yes              | 150                   | 250                        | No                         | 45                                   | 75                                   | 20-20                                 | AB                        | 1                    |                        | 75                   | 2.5                      | 500                   | Yes          | 11        | 550.00       |  |
|                     | 5050   | I   | 0.01         | Yes              | 150                   | 250                        | No                         | 60                                   | 100                                  | 20-20                                 | AB                        | 1                    |                        | 75                   | 2.0                      | 2V                    | Yes          | 22        | 995.00       |  |
| CREST AUDIO         | FA2401   | B   | 0.025        | Yes              | 35                    | 1.1V                       | No                         | 325                                  | 550                                  | 20-20                                 | AB                        | 1.5                  | 20                     |                      |                          |                       |              | 36        | 1769.00      | Bridgeable. As above. As above. As above. †1200 watts. Bridgeable; operates into 2 ohms. As above. As above. As above. Bridgeable. As above. As above. As above. |
|                     | FA1201   | B   | 0.025        | Yes              | 35                    | 870                        | No                         | 290                                  | 450                                  | 20-20                                 | AB                        | 1.5                  | 20                     |                      |                          |                       |              | 33        | 1319.00      |  |
|                     | FA901  | B   | 0.025        | Yes              | 35                    | 710                        | No                         | 225                                  | 300                                  | 20-20                                 | AB                        | 1.5                  | 20                     |                      |                          |                       |              | 30        | 879.00       |  |
|                     | FA601  | B   | 0.025        | Yes              | 35                    | 650                        | No                         | 125                                  | 200                                  | 20-20                                 | AB                        | 1.5                  | 20                     |                      |                          |                       |              | 26        | 764.00       |  |
|                     | 8001   | B   | 0.025        | Yes              | 35                    | 1.8V                       | No                         | 750                                  | †                                    | 20-20                                 | AB                        | 2                    | 20                     |                      |                          |                       |              | 80        | 3189.00      |  |
|                     | 7001   | B   | 0.02         | Yes              | 35                    | 1.4V                       | No                         | 550                                  | 715                                  | 20-20                                 | AB                        | 2                    | 20                     |                      |                          |                       |              | 50        | 2589.00      |  |
|                     | 6001   | B   | 0.025        | Yes              | 35                    | 1.2V                       | No                         | 400                                  | 600                                  | 20-20                                 | AB                        | 2                    | 20                     |                      |                          |                       |              | 48        | 2189.00      |  |
|                     | 4801   | B   | 0.025        | Yes              | 35                    | 1.1V                       | No                         | 300                                  | 480                                  | 20-20                                 | AB                        | 2                    | 20                     |                      |                          |                       |              | 45        | 1589.00      |  |
|                     | CC301  | B   | 0.025        | Yes              | 35                    | 1.1V                       | No                         | 350                                  | 500                                  | 20-20                                 | AB                        | 1.5                  | 20                     |                      |                          |                       |              | 50        | 1389.00      |  |
|                     | CC151  | B   | 0.05         | Yes              | 35                    | 1V                         | No                         | 150                                  | 300                                  | 20-20                                 | AB                        | 1.5                  | 20                     |                      |                          |                       |              | 45        | 1189.00      |  |
|                     | 1501A  | B   | 0.06         | Yes              | 25                    | 610                        | No                         | 75                                   | 125                                  | 20-20                                 | AB                        | 1                    | 20                     |                      |                          |                       |              | 17        | 839.00       |  |
|                     | 1001A  | B   | 0.06         | Yes              | 20                    | 420                        | No                         | 40                                   | 70                                   | 20-20                                 | AB                        | 1                    | 20                     |                      |                          |                       |              | 17        | 679.00       |  |
| CROWN INTERNATIONAL | Delta-Omega 2000                                   | B/M   | 0.05         | Yes              | 32                    | Sel.                       | No                         | 730                                  | †                                    | 0-45                                  | AB/B                      |                      |                        |                      |                          |                       |              | 92        | 4495.00      | †1300 watts.   |
|                     | Macro-Tech 10K                                     | B/M   |              | Yes              |                       |                            | No                         | †                                    | ††                                   |                                       | AB/B                      |                      |                        |                      |                          |                       |              | 130       | 9995.00      |  |
|                     | PSA-2DX  | B   | 0.002        | No               | 30                    | 2.1V                       | No                         | 265                                  | 380                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 57        | 2195.00      | Bridged or parallel mono operation; accessory card slot. As above.   |
|                     | PSA-2X   | B   | 0.002        | No               | 30                    | 2.1V                       | No                         | 265                                  | 380                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 57        | 1995.00      |  |
|                     | Macro-Tech 2400                                    | B   | 0.1          | Yes              | 13                    | Sel.                       | No                         | 515                                  | 710                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 51¾       | 1995.00      |  |
|                     | Macro-Tech 1200                                    | B   | 0.1          | Yes              | 13                    | Sel.                       | No                         | 295                                  | 400                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 44¼       | 1565.00      | Bridged or parallel mono operation. As above; accessory card slot.   |
|                     | PS-400   | B   | 0.001        | Opt.             | 16                    | 1.8V                       | No                         | 165                                  | 260                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 55        | 1259.00      |  |
|                     | Micro-Tech 1200                                    | B   | 0.1          | Yes              | 13                    | Sel.                       | No                         | 295                                  | 400                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 44¼       | 1295.00      |  |
|                     | Macro-Tech 600                                     | B   | 0.1          | Yes              | 13                    | Sel.                       | No                         | 220                                  | 275                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 39¼       | 1295.00      | Bridged or parallel mono operation. As above; accessory card slot.   |
|                     | DC-300A-II   | B   | 0.001        | No               | 8                     | 1.8V                       | No                         | 155                                  | 250                                  | 20-20                                 | AB/B                      |                      |                        |                      |                          |                       |              | 45        | 1095.00      |  |
| (Continued)         | Power Base 2                                       | B   | 0.1          | Yes              | 13                    | Sel.                       | No                         | 320                                  | 400                                  |                                       | AB/B                      |                      |                        |                      |                          |                       |              | 32        | 1049.00      | Bridged or parallel mono operation.  |

# Now the Classics Are for Everyone.

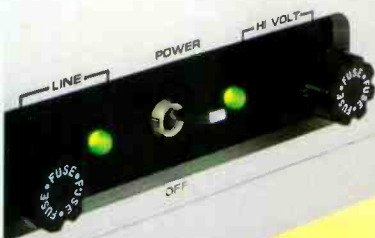
audio research

HIGH DEFINITION®  
STEREO POWER AMPLIFIER  
CLASSIC 60



audio research

HIGH DEFINITION®  
STEREO POWER AMPLIFIER  
CLASSIC 30



Despite the undoubted pleasure that high-performance amplifiers bring to legions of audiophiles and music lovers, such rarified performance usually comes at relatively high cost.

Audio Research believes that highly accurate music reproduction isn't just the prerogative of the well-heeled audio enthusiast, but the natural desire of every serious music lover.

Audio Research now proudly introduces the Classic 60 and the Classic 30, two new, moderately priced stereo hybrid amplifiers that come surprisingly close to the benchmark set by the acclaimed Classic 150 hybrid monaural amplifier.

It doesn't take a "golden ear" to immediately perceive the emotional power and sonic authority the Classic 60 and Classic 30 bring to any good musical program. Silences are more silent by an order of magnitude; the soundstage is broad, deep, tall; instrumental timbres have an uncommon truth to them; dynamics soft and loud are unbelievably convincing.

And the Classic 60 and Classic 30 are designed to provide years of trouble-free service. You don't need to be a technician to use and enjoy them.

Quite simply, the Classic 60 and Classic 30 bring world-class audio performance within reach of most music lovers. Audition one today at your nearest Audio Research dealer.

**20**  
classic years

1970 - 1990

**audio research®**  
HIGH DEFINITION®





Anodized black front panel  
available at additional cost.



Anodized black front panel  
available at additional cost.

## For effortless musicality and value second to none... it has to be the Classic 60.

The new Classic 60 Hybrid Stereo Power Amplifier resembles the long-popular D115 in Audio Research's family of High Definition®

power amplifiers. But its lineage is strictly Classic 150. Which means nothing less than state-of-the-art in design, construction, musicality and operational convenience...at an affordable price.

Like the Classic 150, the Classic 60 proceeds from the notion that power ratings don't always describe a power amplifier's real capabilities. Far more important are such qualities as dynamic stability, lucidity, subtlety.

And to achieve those, Audio Research has used its traditional partial cathode coupling along with triode operation of the Classic 60's eight 6550 power output tubes. Additional circuit improvements, as well as the usual rigorous parts selection and manufacturing Audio Research is noted for, also contribute sonically.

Translated into the language of listening, this signifies stunning bandwidth, a noise floor virtually beneath audibility and musically fulfilling SPLs at dramatically lower gain settings. Dynamics, timbres of individual instruments, soundstage, and musical emotion all surge out from a black velvet of silence.

Simply put, the Classic 60 resolves far more of a musical program than amplifiers rated at two, three or four times its seemingly modest 60 WPC.

But the Classic 60 is easily up to the task of driving all but the most demanding loudspeakers, even in spacious listening rooms. And while it shows modest pre-amplifiers in their best light, it also shines when coupled with premiere designs, such as Audio Research's SP14 or SP15.

Convenience figures high on the Classic 60's list of attributes, as well. For example, DC balance of the output tubes is maintained automatically, while tube biasing continuously adjusts to changes in incoming line voltage. Performance



For performance, convenience, musicality and value, the clear choice is the Classic 60.

stays razor-sharp without bothersome tweaking or adjustments. And quiet fan cooling, along with triode operation, means significantly longer tube life. A Classic 60 owner can look forward to years of low-maintenance performance.

## Putting the state-of-the art within everyone's reach... the Classic 30.

It's tempting to regard the Classic 30 as merely the smaller sibling of the Classic 60 and Classic 150.

But the skeptical music lover or audiophile who auditions the Classic 30 is in for quite a shock. Because this "little" hybrid stereo amplifier—rated at 30 WPC—packs a sonic authority and eloquent musical veracity that larger, more conventional power amplifiers might envy. Our engineers have discovered that sometimes less is very definitely more.

Of course, the Classic 30 features almost all the same technology as its bigger brothers, scaled down for more modest applications. It has four 6550s instead of eight.

two 6FQ7 driver tubes instead of four; no fans, because it runs remarkably cool without any help whatever.

But this smaller design still retains a similar degree of exceptional musical resolution. Even at low gain settings, the Classic 30 is far more musically lucid than amplifiers objectively far more powerful.

The Classic 30 is at its pristine best with moderately efficient loudspeakers in small- to medium-sized listening rooms; with program materials that demand high resolution and subtlety rather than pure muscle. In that context, it reveals the same sonic mastery as its more powerful siblings.

But don't take our word for it. Audition a Classic 30 today and discover just how much more music can come alive...with "less".



In addition to gaining superlative sonic performance, every Classic 60 or Classic 30 owner can rely on Audio Research's 20-year tradition of service and support.



## CLASSIC 60 SPECIFICATIONS

(AC line set at 120V 60Hz for these specifications)

**POWER OUTPUT:** 60 watts minimum continuous at 16 ohms from 15Hz to 20kHz with less than 1.0% total harmonic distortion (typically below .005% at 1 watt)

Approximate actual power available at "clipping": 62 watts (1kHz) (Note that actual power output is dependent upon both line voltage and "condition" ie: if power line has high distortion, maximum power will be affected adversely, although from a listening standpoint this is not very critical.)

**POWER BANDWIDTH:** (-3dB Points) 12Hz to 40kHz

**INPUT SENSITIVITY:** .55V RMS for rated output

**INPUT IMPEDANCE:** 100K ohms, nominal

**OUTPUT REGULATION:** Approximately 0.3dB 16 ohm load to open circuit (Damping factor approximately 30)

**NEGATIVE FEEDBACK:** 20dB

**SLEW RATE:** 20 volts/microsecond

**RISE TIME:** 2.0 microseconds

**HUM & NOISE:** Less than 2.0mV RMS - 84dB below rated output (20kHz bandwidth unweighted, inputs shorted)

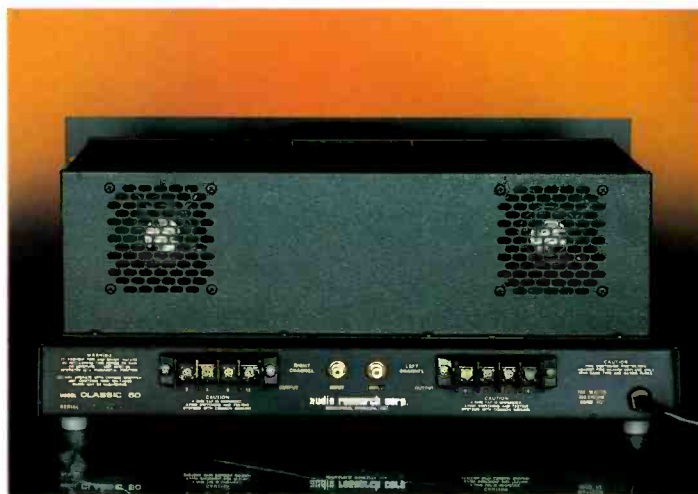
**POWER SUPPLY ENERGY STORAGE:** Approximately 280 joules

**POWER REQUIREMENTS:** 105-125VAC 60Hz (210-250VAC 50Hz) 500 watts at rated output, 700 watts maximum, 370 watts at "idle"

**TUBES REQUIRED:** 4 - Matched pair 6550 (low gas) - Power Output; 4 - 6FQ7/6CG7 - Drivers

**DIMENSIONS:** 19" (48 cm) W (standard rack panel) x 7" (18 cm) H x 15.75" (40 cm) D (front panel back). Handles extend 1 5/8" (4.1 cm) forward of the front panel. Output connectors extend 1" behind rear panel.

**WEIGHT:** 63 lbs. (28.64 kg) Net; 76 lbs. (34.55 kg) Shipping



Quiet, efficient cooling fans mounted inside the top cover of the Classic 60 help maintain thermal stability of internal components for consistent, trouble-free service.

## CLASSIC 30 SPECIFICATIONS

(AC line set at 120V 60Hz for these specifications)

**POWER OUTPUT:** 30 watts minimum continuous at 16 ohms from 17Hz to 20kHz with less than 1.0% total harmonic distortion (typically below .005% at 1 watt)

Approximate actual power available at "clipping": 32 watts (1kHz) (Note that actual power output is dependent upon both line voltage and "condition" ie: if power line has high distortion, maximum power will be affected adversely, although from a listening standpoint this is not very critical.)

**POWER BANDWIDTH:** (-3dB Points) 15Hz to 50kHz

**INPUT SENSITIVITY:** .4V RMS for rated output

**INPUT IMPEDANCE:** 100K ohms, nominal

**OUTPUT REGULATION:** Approximately 0.4dB 16 ohm load to open circuit (Damping factor approximately 23)

**NEGATIVE FEEDBACK:** 19dB

**SLEW RATE:** 15 volts/microsecond

**RISE TIME:** 3.5 microseconds

**HUM & NOISE:** Less than 0.5mV RMS - 93dB below rated output (20kHz bandwidth unweighted, inputs shorted)

**POWER SUPPLY ENERGY STORAGE:** Approximately 150 joules

**POWER REQUIREMENTS:** 105-125VAC 60Hz (210-250VAC 50Hz) 300 watts at rated output, 400 watts maximum, 200 watts at "idle"

**TUBES REQUIRED:** 2 - Matched pair 6550 (low gas) - Power Output; 2 - 6FQ7/6CG7 - Drivers

**DIMENSIONS:** 19" (48 cm) W (standard rack panel, x 7" (18 cm) H x 14.5" (37 cm) D (front panel back). Handles extend 1 5/8" (4.1 cm) forward of the front panel. Output connectors extend 1" behind rear panel.

**WEIGHT:** 46 lbs. (20.9 kg) Net; 62 lbs. (28.2 kg) Shipping



4, 8 and 16-ohm output taps enable the Classic 30 owner to closely match the impedance characteristics of loudspeakers for better dynamic performance, more musical satisfaction.

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## Three-Year Limited Warranty

All Audio Research products are backed by a Three-Year Limited Warranty: vacuum tubes are warranted against defects for 90 days. For one year from date of purchase. Audio

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# AMPLIFIERS

| MANUFACTURER                       | Model<br>(R) = Remote Included<br>(RO) = Remote Optional | POWER AMP  |              |                  |                       |                            |                            |                                      |                                      |  |                           |                      |                       |                                   |                          | PREAMP             |              |           |  | Notes                    |
|------------------------------------|--|--|--------------|------------------|-----------------------|----------------------------|----------------------------|--------------------------------------|--------------------------------------|--|---------------------------|----------------------|-----------------------|-----------------------------------|--------------------------|--------------------|--------------|-----------|--|--------------------------|
|                                    |  | Type: Integrated = I, Basic B,<br>Tube = T, Hybrid = H, Mono = M | Rated THD, % | Balanced Inputs? | Rated Slew Rate, V/μs | High-Level Sensitivity, mV | Does Unit Invert Polarity? | Cont. Avg. Watts/Channel into 8 Ohms | Cont. Avg. Watts/Channel into 4 Ohms | Rated Full-Power Bandwidth,<br>Hz to kHz | Class of Output Operation | Dynamic Headroom, dB | Input Impedance, ohms | MM Phone S.N. — 00—A: Not re 5 mV | MM Phone Sensitivity, mV | Moving Coil Input? | Weight, Lbs. | Price, \$ |  |                          |
|                                    |  |  |              |                  |                       |                            |                            |                                      |                                      |  |                           |                      |                       |                                   |                          |                    |              |           |  |                          |
| CROWN INTERNATIONAL<br>(Continued) | Micro-Tech 600   | B  | 0.1          | Yes              | 13                    | Sel.                       | No                         | 220                                  | 275                                  | 20-20                                    | AB/B                      |                      |                       |                                   |                          |                    | 39 1/4       | 995.00    | As above.  |                          |
|                                    | PS-200   | B  | 0.001        | Opt.             | 16                    | 1.3V                       | No                         | 95                                   | 135                                  | 20-20                                    | AB/B                      |                      |                       |                                   |                          |                    | 25           | 819.00    | As above.  |                          |
|                                    | Power Base 1   | B  | 0.1          | Yes              | 13                    | Sel.                       | No                         | 200                                  |                                      |  | AB/B                      |                      |                       |                                   |                          | 30                 | 799.00       |           |  |                          |
|                                    | D-150A-II  | B  | 0.001        | No               | 6                     | 1.2V                       | No                         | 75                                   |                                      | 20-20                                    | AB/B                      |                      |                       |                                   |                          | 24                 | 795.00       |           |  |                          |
|                                    | D-75   | B  | 0.001        | No               | 6                     | 812                        | No                         | 35                                   | 40                                   | 20-20                                    | AB/B                      |                      |                       |                                   |                          | 10                 | 524.00       |           |  |                          |
| CYRUS                              | I  | I  | 0.003        | Yes              | †                     | 65                         | No                         | 30                                   | 40                                   | 20-20                                    | AB                        | 1.4                  | 14                    | 84                                | 0.4                      | Yes                | 15           | 499.00    | †Slew factor of 10. Biamp capable. As above. Add-on power supply, Model PSX, \$699.00.   |                          |
|                                    | II   | I  | 0.003        | Yes              | †                     | 50                         | No                         | 50                                   | 80                                   | 20-20                                    | AB                        | 1.4                  | 14                    | 84                                | 0.3                      | Yes                | 16           | 799.00    |  |                          |
| DB SYSTEMS                         | DB-6A  | B  | 0.003        | No               | 15                    | 1V                         | No                         | 40                                   | 70                                   | 20-20                                    | AB                        | 3                    | 48                    |                                   |                          |                    | 18           | 795.00    | Three-times power-supply capacitance optional. Per pair, \$1550.00.  |                          |
|                                    | DB-6A-M  | B/M  | 0.008        | No               | 30                    | 1V                         | No                         | 140                                  | 225                                  | 20-20                                    | AB                        | 3                    | 48                    |                                   |                          |                    | 18           | 795.00    |  |                          |
| DBX                                | BX-3MkII   | B  | 0.003        | No               | 200                   | 1V                         | No                         | 400                                  | 500                                  | 20-20                                    | AB                        | 1.5                  | 20                    |                                   |                          |                    | 46.4         | 1299.00   | Two-, three-, or four-channel operation.   |                          |
| DENON                              | POA-6600A  | B/M  | 0.02         | Yes              | 500                   |                            |                            | 260                                  |                                      | 5-80                                     | †                         |                      | 25                    |                                   |                          |                    | 34 1/2       | 750.00    | Remote power switching control. †Optical Class A. As above; no negative feedback. Dual mono. Remote power switching control; bridgeable. Coaxial and optical inputs; O/A converters. |                          |
|                                    | POA-4400   | B/M  | 0.015        | Yes              | 500                   |                            |                            | 150                                  |                                      | 5-80                                     |                           |                      | 25                    |                                   |                          |                    | 22 3/4       | 500.00    |  |                          |
|                                    | POA-2400   | B  | 0.01         | No               |                       |                            |                            | 200                                  |                                      | 5-80                                     | †                         |                      | 25                    |                                   |                          |                    | 38 1/2       | 750.00    |  |                          |
|                                    | POA-800  | B  | 0.05         | No               |                       |                            |                            | 50                                   |                                      | 10-50                                    |                           |                      | 25                    |                                   |                          |                    | 15 1/2       | 320.00    |  |                          |
|                                    | PMA-1520   | I  | 0.005        | No               |                       | 150                        |                            | 130                                  |                                      | 5-50                                     | †                         |                      | 47                    | 95                                | 2.5                      | 160                | Yes          | 28 1/2    |  | 1000.00                  |
|                                    | PMA-920  | I  | 0.005        | No               |                       | 150                        |                            | 115                                  |                                      | 5-50                                     | †                         |                      | 47                    | 94                                | 2.5                      | 160                | Yes          | 24 1/4    |  | 600.00                   |
|                                    | PMA-720  | I  | 0.01         | No               |                       | 150                        |                            | 90                                   |                                      | 5-40                                     | †                         |                      |                       | 88                                | 2.5                      | 160                | Yes          | 17 1/4    |  | 450.00                   |
|                                    | PMA-520  | I  | 0.015        | No               |                       | 150                        |                            | 70                                   |                                      | 5-40                                     | †                         |                      |                       | 88                                | 2.5                      | 160                | Yes          | 16 1/4    |  | 350.00                   |
|                                    | PMA-320  | I  | 0.05         | No               |                       | 150                        |                            | 60                                   |                                      | 5-40                                     |                           |                      |                       | 86                                | 2.5                      | 160                | Yes          | 12 3/4    |  | 300.00                   |
|                                    | PMA-250  | I  | 0.08         | No               |                       | 150                        |                            | 30                                   |                                      | 10-40                                    |                           |                      |                       | 72                                | 2.5                      | 160                | No           | 10 3/4    |  | 250.00                   |
| DISTECH                            | LSIIa Stereo   | B  | 0.02         | No               | 65                    | 120                        | No                         | 120                                  | 250                                  | 3-100                                    | AB                        | 3.2                  | 75                    |                                   |                          |                    |              | 1250.00   | Pair   |                          |
|                                    | LSIIa Mono   | B/M  | 0.01         | No               | 100                   | 120                        | No                         | 120                                  | 250                                  | 3-100                                    | AB                        | 5                    | 75                    |                                   |                          |                    |              | 3000.00   |  |                          |
| DORETECH                           | Triode-70  | B/T  | 1.0          | No               |                       | 1.2V                       | No                         | 25                                   | 25                                   |  | AB                        |                      | 470                   |                                   |                          |                    | 29           | 519.00    | Modification of Dynaco ST-70; triode output; bridges to 50 watts into 2, 4, or 8 ohms.   |                          |
| DUAL                               | PA5060   | I  | 0.01         | Yes              |                       | 200                        |                            | 60                                   |                                      | 6-95                                     |                           |                      |                       | 78                                | 2.5                      | 140                | Yes          | 21        | 399.00   |                          |
|                                    | PA5030   | I  | 0.01         | Yes              |                       | 200                        |                            | 30                                   |                                      | 6-90                                     |                           |                      |                       | 78                                | 2.5                      | 140                | Yes          | 17        | 299.00   |                          |
| ELECTRO-COMPA-NIET                 | AW 100   | B  | 0.2          |                  |                       |                            | No                         | 100                                  | 180                                  |  | A/AB                      |                      |                       |                                   |                          |                    | 39           | 2195.00   | Nine inputs; video switching.  |                          |
|                                    | AW 250   | B  | 0.2          |                  |                       |                            | No                         | 250                                  | 380                                  |  | A/AB                      |                      |                       |                                   |                          |                    | 65           | 3995.00   |  |                          |
| ELECTRON KINETICS                  | Eagle 2A   | B  | 0.1          | No               | 120                   | 1.3V                       | No                         | 120                                  | 240                                  | 0-100                                    | AB                        | 0.5                  | 100                   |                                   |                          |                    | 31           | 1395.00   |  |                          |
|                                    | Eagle 400  | B/M  | 0.1          | No               | 240                   | 1.3V                       | No                         | 400                                  | 800                                  | 0-100                                    | AB                        | 1                    | 100                   |                                   |                          |                    | 32           | 1695.00   |  |                          |
| ESSENCE                            | 150 Mk II  | B  | 0.01         | Opt.             |                       |                            | No                         | 200                                  | 300                                  | 5-500                                    | AB                        |                      | 20                    |                                   |                          |                    | 70           | 3895.00   | Vibrationally isolated.  |                          |
| EXPOSURE                           | X  | I  |              |                  |                       |                            | No                         | 35                                   |                                      | 20-20                                    | AB                        |                      |                       |                                   |                          |                    | 18           | 1025.00   | †Optional. Includes preamp power supply.   |                          |
|                                    | VIII   | B  |              |                  |                       |                            | No                         | 50                                   |                                      | 20-20                                    | AB                        |                      |                       |                                   |                          |                    | 15           | 1125.00   |  |                          |
|                                    | VIII Super   | B  |              |                  |                       |                            | No                         | 55                                   |                                      | 20-20                                    | AB                        |                      |                       |                                   |                          |                    | 15           | 1125.00   | Dual mono. As above.   |                          |
|                                    | IV Dual  | B  |              |                  |                       | No                         | 80                         |                                      | 20-20                                | AB                                       |                           |                      |                       |                                   |                          | 33                 | 2075.00      |           |  |                          |
|                                    | IV Dual Regulated  | B  |              |                  |                       | No                         | 80                         |                                      | 20-20                                | AB                                       |                           |                      |                       |                                   |                          | 33                 | 2875.00      |           |  |                          |
| FENTON AUDIO                       | Stereobate   | B/M  | 0.025        |                  | 500                   | 500                        | No                         | 300                                  | 600                                  | 20-100                                   | A/AB                      |                      | 10                    |                                   |                          |                    | 66           | 2300.00   | MOS-FET; water-cooled.   |                          |
| FM ACOUSTICS                       | Resolution Series 610                                    | B  | 0.009        | Yes              | 30                    | 1.6V                       | Var.                       | 250                                  | 350                                  | 20-20                                    | A                         |                      | 35                    |                                   |                          |                    | 53           | 12,500.   | Operates into 0.1-ohm load or less; output current, 200 amps or more, peak.  |                          |
|                                    | Resolution Series 810                                    | B  | 0.008        | Yes              | 30                    | 1.6V                       | Var.                       | 430                                  | 750                                  | 20-20                                    | A                         |                      | 40                    |                                   |                          |                    | 110          | 22,500.   |  |                          |
|                                    | FM 300A  | B  | 0.009        | No               | 25                    | 1.6V                       | No                         | 100                                  | 150                                  | 20-20                                    | A                         |                      | 4                     |                                   |                          |                    | 26 1/2       |           |  |                          |
|                                    | FM 600A ULI  | B  | 0.008        | No               | 25                    | 1.6V                       | No                         | 250                                  | 350                                  | 20-20                                    | A                         |                      | 4.5                   |                                   |                          |                    | 42           |           |  |                          |
| FORTE AUDIO                        | 1a   | B  | 0.1          | No               | 40                    | 1V                         | No                         | 50                                   | 80                                   | 7-30                                     | A                         | 0                    | 75                    |                                   |                          |                    | 31           | 1100.00   | 30 amps, peak, per channel.  |                          |
|                                    | 3  | B  | 0.1          | No               | 40                    | 1.9V                       | No                         | 200                                  | 320                                  | 7-30                                     | AB                        | 1.3                  | 75                    |                                   |                          |                    | 31           | 1100.00   | As above.  |                          |
| FOSGATE-AUDIONICS                  | M-60 mkII  | B/M  | 0.10         | No               |                       | Var.                       | No                         | 40                                   | 60                                   | 20-20                                    | AB                        | 1.0                  | 50                    |                                   |                          |                    | 6            | 199.00    | High-current design.   |                          |
|                                    | M-100 mkII   | B/M  | 0.10         | No               |                       | Var.                       | No                         | 80                                   | 150                                  | 20-20                                    | AB                        | 1.0                  | 50                    |                                   |                          |                    | 12           | 399.00    |  |                          |
|                                    | S-100 mkII   | B  | 0.10         | No               |                       | Var.                       | No                         | 80                                   | 130                                  | 20-20                                    | AB                        | 1.0                  | 50                    |                                   |                          |                    | 14           | 499.00    |  |                          |
|                                    | T-100 mkII   | B  | 0.10         | No               |                       | Var.                       | No                         | 75                                   | 125                                  | 20-20                                    | AB                        | 1.0                  | 50                    |                                   |                          |                    | 16           | 599.00    |  | Three-channel operation. |



# AMPLIFIERS

| MANUFACTURER           | Model<br>(RI) = Remote Included.<br>(RD) = Remote Optional | Type: Integrated = I, Basic = B,<br>Tube = T, Hybrid = H, Mono = M | Rated THD, % | Balanced Inputs? | Rated Slew Rate, V/μs | High-Level Sensitivity, mV | Does Unit Invert Polarity? | Cont. Avg. Watts Channel into 8 Ohms | Cont. Avg. Watts Channel into 4 Ohms | Rated Full-Power Bandwidth,<br>Hz to kHz | POWER AMP                 |                      |                          |                                   | PREAMP                   |                    |              |                | Price, \$   | Notes   |
|------------------------|--|--|--------------|------------------|-----------------------|----------------------------|----------------------------|--------------------------------------|--------------------------------------|--|---------------------------|----------------------|--------------------------|-----------------------------------|--------------------------|--------------------|--------------|----------------|---|---|
|                        |  |  |              |                  |                       |                            |                            |                                      |                                      |  | Class of Output Operation | Dynamic Headroom, dB | Input Impedance, Kilohms | MM Phono S/N, -dB: A wtd. re 5 mV | MM Phono Sensitivity, mV | Moving Coil Input? | Weight, Lbs. |                |   |   |
|                        |  |  |              |                  |                       |                            |                            |                                      |                                      |  |                           |                      |                          |                                   |                          |                    |              |                |   |   |
| GOLDMUND               | Mimesis 3(RD)  | B  | 0.01         | Yes              | 100                   | 155                        | No                         | 100                                  | 200                                  | 0-850                                    |                           |                      |                          |                                   |                          |                    | 34           | 5690.00        | A.C. polarity switch.   |   |
|                        | Mimesis 6  | B  | 0.01         | No               | 100                   | 155                        | No                         | 80                                   | 150                                  | 0-600                                    |                           |                      |                          |                                   |                          |                    | 27½          | 2690.00        |   |   |
|                        | Mimesis 9  | B  | 0.01         | Yes              | 100                   | 155                        | No                         | 175                                  | 350                                  | 0-1M                                     |                           |                      |                          |                                   |                          |                    | 143          | 8990.00        | As above; star ground configuration. Fits directly into Goldmund Apologue speaker.  |   |
|                        | Goldcube(RD)   | B/M  |              | No               |                       |                            | No                         |                                      |                                      |  |                           |                      |                          |                                   |                          |                    |              | 10,000.        |   |   |
| GRUNDIG                | A-9000   | I  | 0.005        | No               |                       | 150                        | No                         | 120                                  | 200                                  | 5-80                                     | AB                        | 1.5                  | 50                       | 82                                | 2.5                      | 160                | Yes          | 1199.00        |   |   |
|                        | A-903  | I  |              | No               |                       | 180                        | No                         | 100                                  | 150                                  | 5-50                                     | AB                        | 1.5                  | 50                       | 78                                | 1.9                      | 160                | No           | 699.00         |   |   |
| HAFLER                 | SE120  | B  | 0.008        | No               | 13                    |                            | No                         | 65                                   | 75                                   | 20-20                                    | AB                        | 1.8                  | 23                       |                                   |                          |                    | 18           | 325.00         | Bridgeable.   |   |
|                        | DH120  | B  | 0.009        | No               | 30                    |                            | No                         | 62                                   |                                      | 20-20                                    | AB                        | 1.8                  | 22                       |                                   |                          |                    | 18           | 349.00         | As above; ambience recovery system.   |   |
|                        | XL280  | B  | 0.05         | No               | 75                    |                            | No                         | 145                                  | 200                                  | 20-20                                    | AB                        | 1.4                  | 47                       |                                   |                          |                    | 27           | 675.00         | Bridgeable; kit, \$600.00.  |   |
|                        | DH500  | B  | 0.025        | No               | 40                    |                            | No                         | 255                                  | 400                                  | 20-20                                    | AB                        | 1.5                  | 47                       |                                   |                          |                    | 49           | 749.00         | Kit, \$700.00.  |   |
|                        | XL600  | B  | 0.05         | No               | 100                   |                            | No                         | 305                                  | 450                                  | 20-20                                    | AB                        | 1.4                  | 47                       |                                   |                          |                    | 51           | 1195.00        | Bridgeable.   |   |
| HARMAN KARDON          | HK6100   | I  | 0.09         | No               | 90                    | 135                        | No                         | 30                                   | 30                                   | 20-20                                    | AB                        |                      | 22                       | 78                                | 2.2                      | 130                | No           | 12⅞            | 249.00  | Selectable power-supply voltage; active/passive phono section.                                      |
|                        | HK6200   | I  | 0.09         | No               | 90                    | 135                        | No                         | 45                                   | 45                                   | 20-20                                    | AB                        |                      | 22                       | 80                                | 2.2                      | 120                | No           | 13½            | 349.00  |   |
|                        | HK6500   | I  | 0.09         | No               | 90                    | 135                        | No                         | 70                                   | 70                                   | 20-20                                    | AB                        |                      | 22                       | 80                                | 2.2                      | 130                | Yes          | 18⅞            | 549.00  | As above; phase-correct loudness control.   |
|                        | HK6600   | I  | 0.08         | No               | 180                   | 135                        | No                         | 90                                   | 90                                   | 20-20                                    | AB                        |                      | 22                       | 80                                | 2.2                      | 130                | Yes          | 22½            | 699.00  | As above. Selectable power-supply voltage; active/passive phono section; interactive A/V switching. |
|                        | HK6800   | I  | 0.08         | No               | 280                   | 135                        | No                         | 120                                  | 120                                  | 20-20                                    | AB                        |                      | 22                       | 80                                | 2.2                      | 220                | Yes          |                | 949.00  | As above.   |
|                        | HK6900   | I  | 0.08         | No               | 280                   | 135                        | No                         | 170                                  | 170                                  | 20-20                                    | AB                        |                      | 22                       | 80                                | 2.2                      | 220                | Yes          |                | 1299.00   | As above.   |
| HARMAN KARDON CITATION | twenty-two   | B  | 0.08         |                  | 160                   | 1V                         | No                         | 200                                  | 200                                  | 20-20                                    | AB                        |                      | 22                       |                                   |                          |                    | 45           | 1149.00        | Bridges to 400 watts.   |   |
|                        | twenty-four  | B  | 0.08         |                  | 160                   | 1V                         | No                         | 100                                  | 100                                  | 20-20                                    | AB                        |                      | 22                       |                                   |                          |                    | 33           | 699.00         | Bridges to 200 watts.   |   |
| HEYBROOK               | P-3  | B  | 0.05         |                  |                       |                            | No                         | 100                                  | 150                                  | 20-50                                    | AB                        |                      |                          |                                   |                          |                    | 20           | 898.00         |   |   |
| INTEGRA AUDIO          | Integra MF120 Mono-Blocks                                  | B/M  |              |                  | 500                   | No                         |                            | 120                                  |                                      |  | AB                        |                      | 100                      |                                   |                          |                    | 32 Pair      | 3000.00 Pair   |   |   |
| JADIS                  | JA-30  | B/T/M  |              | No               | 775                   | No                         | 35                         | 35                                   | 20-35                                | A  |                           |                      |                          |                                   |                          |                    | 50           | 5700.00 Pair   | Bi-wired; auto bias.  |   |
|                        | JA-80  | B/T/M  |              | No               | 775                   | No                         | 75                         | 75                                   | 20-35                                | A  |                           |                      |                          |                                   |                          |                    | 80           | 9900.00 Pair   | As above.   |   |
|                        | JA-200   | B/T/M  |              | No               | 775                   | No                         | 175                        | 175                                  | 20-20                                | A  |                           |                      |                          |                                   |                          |                    | 200          | 15,500.00 Pair | Four chassis; auto bias.  |   |
|                        | JA-500   | B/T/M  |              | No               | 775                   | No                         | 400                        | 400                                  | 20-20                                | AB                                       |                           |                      |                          |                                   |                          |                    |              | 20,000.00 Pair | As above.   |   |
|                        | DEFY 0-7   | B/T  |              | No               | 775                   | No                         | 100                        | 100                                  | 15-60                                | AB                                       |                           |                      |                          |                                   |                          |                    | 80           | 4500.00 Pair   | Bi-wired; auto bias.  |   |
| JRM                    | Power Tower  | B/M  | 0.02         |                  | 100                   | †                          | No                         | ††                                   | †††                                  | 0.6-75                                   | AB                        | 3                    | 50                       |                                   |                          |                    | 75           | 2500.00        | †(2)2.0 and (2)1.1 V. ††(2)180 and (2)70 watts. †††(2)500 and (2)250 watts into 2 ohms. All-cascode design.                   |   |
|                        | Power Tower/ B Pro   | B/M  | 0.02         |                  | 100                   | †                          | No                         | ††                                   | †††                                  | 0.6-75                                   | AB                        | 3                    | 50                       |                                   |                          |                    | 90           | 3100.00        | †(2)2.0 and (2)1.1 V. ††(2)600 and (2)200 watts. †††(2)900 and (2)300 watts into 2 ohms. All-cascode design; bridged outputs. |   |
| JVC                    | AX2911BK(RI)   | I  | 0.003        | No               | 400                   |                            |                            | 100                                  |                                      | 20-20                                    | A Sup. A                  | 30                   | 80                       | 2.5                               | 100                      | Yes                | 44           | 1100.00        | Direct digital inputs. As above; 18-bit D/A converters.   |   |
|                        | AX21010TN(RI)  | I  | 0.004        | No               | 300                   |                            |                            | 100                                  |                                      | 20-20                                    | A Sup. A                  | 30                   | 82                       | 4                                 | 100                      | Yes                | 37           |                |   |   |
| KENWOOD                | KA-V7000(RI)   | I  | 0.05         |                  | 150                   | No                         |                            | 100                                  |                                      | 5-45                                     |                           | 47                   | 78                       | 2.5                               | 135                      | No                 | 34           | 999.00         | Video control amp; Dolby Pro Logic; six audio and six video inputs.   |   |
|                        | KA-V1000R(RI)  | I  | 0.02         |                  | 150                   | No                         |                            | 80                                   |                                      | 5-45                                     |                           | 47                   | 83                       | 2.5                               | 145                      | No                 | 30           | 849.00         | Video control amp; Dolby Surround; inputs as above.   |   |
|                        | Basic-M2A  | B  | 0.004        |                  | 100                   | No                         |                            | 220                                  | 396                                  | 5-100                                    |                           | 47                   |                          |                                   |                          |                    | 34           | 679.00         |   |   |
|                        | Basic-M1A  | B  | 0.008        |                  | 100                   | No                         |                            | 125                                  | 198                                  | 10-75                                    |                           | 47                   |                          |                                   |                          |                    | 21½          | 429.00         |   |   |
|                        | KA-880D  | I  | 0.008        |                  | 150                   |                            |                            | 100                                  |                                      | 10-45                                    |                           | 47                   | 92                       | 2.5                               | 200                      |                    | 22           | 429.00         |   |   |
|                        | KA-128(RI)   | I  | 0.05         |                  | 150                   |                            |                            | 125                                  |                                      | 10-100                                   |                           | 47                   | 81                       | 2.5                               | 100                      |                    | 19           | 349.00         |   |   |
|                        | KA-88  | I  | 0.05         |                  | 150                   |                            |                            | 100                                  |                                      | 10-100                                   |                           | 47                   | 81                       | 2.5                               | 100                      |                    | 16½          | 279.00         |   |   |
| KINERGETICS RESEARCH   | KBA-75   | B  | 0.02         | No               | 65                    | 1.5V                       | No                         | 75                                   | 150                                  | 5-100                                    | A                         | 3                    | 100                      |                                   |                          |                    | 55           | 1495.00        | Dual mono.  |   |
|                        | KBA-202  | B/M  | 0.10         | No               | 65                    | 1.5V                       | No                         | 250                                  | 400                                  | 5-100                                    | AB                        | 3                    | 100                      |                                   |                          |                    |              | 2250.00 Pair   |   |   |
| KLIMO                  | Kent   | B/T/M  | 0.3          | No               |                       |                            | No                         | 35                                   | 35                                   |  | AB                        |                      |                          |                                   |                          |                    | 19           | 2550.00 Pair   |   |   |
|                        | DK-OPTL  | B/T/M  | 0.25         | No               |                       |                            | No                         | 115                                  | 80                                   |  | AB                        |                      |                          |                                   |                          |                    | 42           | 6550.00 Pair   | Output transformerless.   |   |

# THE ADCOM GFP-555 PREAMPLIFIER



**A remarkable combination of exceptional performance, flexibility and value.**

The GFP-555's musical performance is outstanding—by any measurement or listening criterion. For example, *Stereophile*\* calls it "one of the most satisfying preamps around in terms of overall tonal balance . . . You can go back to it after a few weeks and still feel it to be basically right; it reveals most associated equipment as more colored than itself."

At the same time, the GFP-555 is surprisingly affordable. Again, from *Stereophile*\*: "It is unclear from close examination why it should cost only \$500 . . . it outperforms several competitors from the \$2500 bracket."

Here are just a few examples of how we did it. The GFP-555's gain path includes the most innovative state-of-the-art linear amplifiers ever used in high fidelity components, and is simple and direct from input to output.

The speed of the gain stages is almost fifty times faster than CD or LP signals. And the noise and distortion measurements are incredibly low. Direct coupling makes possible a frequency response from below 1 Hz to beyond 400,000 Hz.

Superb construction, incorporating regulated power supplies with large filter capacitors, provides superior performance no matter how widely the musical signal or AC line voltage may fluctuate.

As for flexibility, you can listen to any source while taping from another. There's an unusual number of inputs and outputs, plus adjustable phono gain and capacitance.

If you'd like the full story of this remarkable preamplifier and the review from *Stereophile*\*, please write. Of course, the fastest way to hear its demonstrably superior combination of sonic performance, flexibility and value is to visit your nearest Adcom dealer.

\*Vol. 9 No. 7 (Nov. 1986)

## ADCOM®

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# THE LEGEND CONTINUES



SAE began its efforts over two decades ago with a devotion to engineering and design of sonically superior, sophisticated audio components. We began with rapid success of basic power amplifiers that were capable of tremendous current capabilities and linear power bandwidths. Our symmetrical amplifier circuits are well proven and continue to win critical acclaim and the ears of music lovers worldwide.

Industry firsts from SAE have continued from the early years of high current amplifier designs, digital FM tuning, graphic and parametric equalization and signal routing techniques to the latest microprocessor controlled component separates, our Computer Direct-Line '02' Series.

The six model '02' Series system offers power flexibility of 100, 200 and 600 watts per channel from the A202 and A502 Dual High Resolution Power Amplifiers. The A502 is a very special amp, capable of operating in stereo at 200 watts per channel continuous RMS power or at 600 watts per channel in a dual mono block configuration via rear panel switches and the use of two A502 amplifiers.

The heart of the '02' Series is the P102 Computer Direct-Line Preamplifier. As a control source for all signal information, the P102 was designed for optimum performance of sonics, switching simplicity and flexibility in listening system situations. The P102 and its matching source components, C102 Cassette Deck, D102 Compact Disc Player and T102 Stereo Tuner are all controlled by a proprietary SAE microprocessor loaded with the software for a multitude of audio system functions.

This central processing unit enables each stage of the component to be designed for optimum performance. The front panel control switching

devices, audio signal processing and electrical supply stages must be isolated to reduce signal path distance, eliminate switching distortion and provide a lifetime of factory fresh specifications. Use of state-of-the-art electronic switching devices immediately adjacent to the rear panel terminals prevents any audio information from appearing

at the front panel which greatly reduces the signal path distance and isolates power supply regulation

to avoid magnetic interference with the musical signal.

Similar to our symmetrical amplifiers, there is a circuit in the T102 Stereo Tuner which is complementary, having mirror-imaged positive and negative sine wave circuits to enhance stereo imaging and sensitivity through the FM airwave-to-audio conversion process.

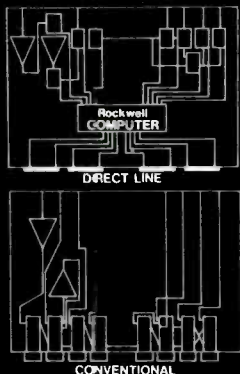
The C102 Cassette Deck is a Full Logic machine with all mechanical transport functions loaded into an electric drawer that is neatly concealed within the machine or placed at hand with the touch of a button. Alpha-numeric LED displays for time functions, Music Search and recording levels provide at-a-glance reference of program status.

Our D102 Compact Disc Player is a full-function remote controlled component complete with independent outputs for fixed and variable levels and a headphone terminal with its own amplifier for private listening situations. A special feature not commonly found in most disc players but which the D102 provides is the *cueing function*. Quite similar to that of the professional broadcast compact disc systems, the D102 offers the ability to precisely locate the beginning of a selection and maintain the position of the laser while the recording functions of the cassette deck are engaged. The end result is a very pleasing recording of selections from a variety of discs without wasting precious tape time and enduring inconsistent and noisy gaps between recorded tracks.

The design philosophy of SAE has always been one of maintaining the leading edge of audio technology and structural integrity in its products. It was conceived that way many years ago and it will remain as such.

SAE is recently under new ownership and we look forward to great success and new advancements for the company and for our loyal customers of years past and years to come.

• DIRECT LINE™ CONCEPT



**SAE**  
SCIENTIFIC AUDIO ELECTRONICS

1703 STEWART STREET  
SANTA MONICA, CALIFORNIA 90404



# AMPLIFIERS

| MANUFACTURER     | Model<br>(R) = Remote Included.<br>(RO) = Remote Optional | Type: Integrated=I, Basic=B,<br>Tube=T, Hybrid=H, Mono=M | Rated THD, % | Balanced Inputs? | Rated Slew Rate, V/μs | High-Level Sensitivity, mV | Does Unit Invert Polarity? | Cont. Avg. Watts Channel into 8 Ohms | Cont. Avg. Watts Channel into 4 Ohms | Rated Full-Power Bandwidth,<br>Hz to kHz | POWER AMP                 |                      |                       |                    | PREAMP                   |                    |              |           | Notes  |   |
|------------------|---|--|--------------|------------------|-----------------------|----------------------------|----------------------------|--------------------------------------|--------------------------------------|--|---------------------------|----------------------|-----------------------|--------------------|--------------------------|--------------------|--------------|-----------|--|---|
|                  |   |  |              |                  |                       |                            |                            |                                      |                                      |  | Class of Output Operation | Dynamic Headroom, dB | Input Impedance, ohms | MM Phono S.N., -dB | MM Phono Sensitivity, mV | Moving Coil Input? | Weight, Lbs. | Price, \$ |  |   |
|                  |   |  |              |                  |                       |                            |                            |                                      |                                      |  |                           |                      |                       |                    |                          |                    |              |           |  |   |
| KLYNE AUDIO ARTS | SKX 120   | B  | 0.1          | Yes              |                       | No                         | 100                        | 200                                  | 0.1-200                              | A/AB                                     |                           | 50                   |                       |                    |                          |                    |              |           | Balanced design.   |   |
| KRELL            | KSA-80B   | B  | 0.05         | Yes              | 500                   | 680                        | No                         | 100                                  | 200                                  | 0-500                                    | A                         | 3                    | 47                    |                    |                          |                    | 75           | 3950.00   | Reprogrammable to 160 watts mono. Reprogrammable to 400 watts mono.  |   |
|                  | KSA-200B  | B  | 0.05         | Yes              | 500                   | 1V                         | No                         | 200                                  | 400                                  | 0-500                                    | A                         | 3                    | 47                    |                    |                          |                    | 115          | 5700.00   |  |   |
|                  | KMA-160   | B/M  | 0.05         | Yes              | 700                   | 1V                         | No                         | 160                                  | 320                                  | 0-500                                    | A                         | 3                    | 47                    |                    |                          |                    | 75           | 7900.00   |  |   |
|                  | KMA-400   | B/M  | 0.05         | Yes              | 700                   | 1.3V                       | No                         | 400                                  | 800                                  | 0-500                                    | A                         | 3                    | 47                    |                    |                          |                    | 115          | 11,400.00 |  |   |
|                  | KRS-100   | B/M  | 0.05         | Yes              | 800                   | 1V                         | No                         | 100                                  | 200                                  | 0-800                                    | A                         | 3                    | 47                    |                    |                          |                    | 150          | 14,000.00 |  |   |
|                  | KRS-200   | B/M  | 0.05         | Yes              | 800                   | 1V                         | No                         | 200                                  | 400                                  | 0-800                                    | A                         | 3                    | 47                    |                    |                          |                    | 250          | 18,000.00 |  |   |
|                  | Aitair  | B  | 0.05         | No               | 500                   | 1V                         | No                         | 80                                   | 160                                  | 0-500                                    | AB                        | 2                    | 47                    |                    |                          |                    | 45           | 5500.00   |  |   |
| LAZARUS          | H1A 50/50   | B/H  | 0.2          | No               |                       | Sel.                       | Yes                        | 50                                   | 100                                  | 5-80                                     | A                         |                      |                       |                    |                          |                    | 35           | 1920.00   | Bridgeable. Two chassis; balanced differential. Bridgeable.  |   |
|                  | H1A M200  | B/H/M  | 0.2          | Yes              |                       | Sel.                       | Var.                       | 200                                  | 350                                  | 5-80                                     | AB                        |                      |                       |                    |                          |                    | 35           | 3840.00   |  |   |
|                  | 200/200   | B/H  | 0.2          | No               |                       | Sel.                       | Yes                        | 200                                  | 350                                  | 5-80                                     | AB                        |                      |                       |                    |                          |                    | 35           | 1750.00   |  |   |
| ELECTRON         | JH 50   | B/T  | 0.3          | No               |                       | No                         | 50                         | 50                                   | 13-95                                | AB                                       |                           |                      |                       |                    |                          |                    | 62           | 3950.00   |  |   |
| LEGACY           | The Power Amplifier                                       | B  | 0.05         | No               | 50                    | 120                        | No                         | 250                                  | 400                                  | 20-20                                    | AB                        | 2.0                  | 25                    |                    |                          |                    | 60           | 996.00    |  |   |
| MARK LEVINSOHN   | No. 20.5  | B/M  | 0.3          | Yes              |                       | 141                        | Sel.                       | 100                                  | 200                                  | 20-20                                    | A                         |                      |                       |                    |                          |                    | 90           | 5750.00   | Regulated power supply. Dual mono. As above.   |   |
|                  | No. 23  | B  | 0.3          | Yes              |                       | 141                        | Sel.                       | 200                                  | 400                                  | 20-20                                    | AB                        |                      |                       |                    |                          |                    | 83           | 4975.00   |  |   |
|                  | No. 27  | B  | 0.3          | Yes              |                       | 141                        | Sel.                       | 100                                  | 200                                  | 20-20                                    | AB                        |                      |                       |                    |                          |                    | 75           | 3495.00   |  |   |
|                  | ML-11   | B  | 0.5          | No               |                       | 141                        | No                         | 50                                   | 100                                  | 20-20                                    | AB                        |                      |                       |                    |                          |                    | 36           | 2100.00   |  |   |
| LEXICON          | 525   | B  | 0.1          | No               | 11                    |                            | No                         | 105                                  | 105                                  | 5-45                                     | AB                        | 1.5                  | 24                    |                    |                          |                    | 38           | 1295.00   | Five-channel operation.  |   |
| LINN HI-FI       | LK280   | B  |              |                  |                       |                            |                            | 80                                   | 160                                  | 20-20                                    | AB                        |                      |                       |                    |                          |                    | 20           | 1495.00   |  |   |
|                  | INTEK   | I  |              |                  |                       |                            |                            | 50                                   |                                      | 20-20                                    |                           |                      |                       |                    |                          |                    | 25           | 995.00    |  |   |
| LUXMAN           | LV111   | I  | 0.05         | No               | 15                    | 150                        | No                         | 40                                   |                                      | 20-20                                    | AB                        |                      | 40                    | 82                 | 2.5                      | 140                | No           | 14.3      | 350.00   | Direct digital inputs. As above. Bridgeable.    |
|                  | LV112   | I  | 0.05         | No               | 20                    | 150                        | No                         | 55                                   |                                      | 20-20                                    | AB                        |                      | 40                    | 84                 | 2.5                      | 140                | No           | 19.8      | 550.00   |   |
|                  | LV113   | I  | 0.05         | No               | 20                    | 150                        | No                         | 65                                   |                                      | 20-20                                    | AB                        |                      | 40                    | 84                 | 2.5                      | 140                | No           | 21.6      | 750.00   |   |
|                  | LV105u  | I/H  | 0.25         | No               | 12                    | 150                        | No                         | 80                                   |                                      | 20-20                                    | AB                        |                      | 47                    | 90                 | 2.0                      | 160                | Yes          | 25.3      | 1000.00  |   |
|                  | LV117   | I  | 0.05         | No               | 12                    | 150                        | No                         | 110                                  |                                      | 20-20                                    | AB                        |                      | 47                    |                    |                          |                    | 34.5         | 1200.00   |  |   |
|                  | M113  | B  | 0.03         | No               | 15                    | Sel.                       | No                         | 50                                   |                                      | 20-20                                    | AB                        |                      | 42                    |                    |                          |                    | 18.7         | 600.00    |  |   |
|                  | M117  | B  | 0.03         | No               | 20                    | 1V                         | No                         | 200                                  |                                      | 20-20                                    | AB                        |                      | 37                    |                    |                          |                    | 52           | 1250.00   |  |   |
|                  |   |  |              |                  |                       |                            |                            |                                      |                                      |  |                           |                      |                       |                    |                          |                    |              |           |  |   |
| MADISON FIELDING | PA900   | B  | 0.01         | No               | 20                    | 100                        | No                         | 150                                  | 220                                  | 20-20                                    | AB                        | 1.5                  | 100                   |                    |                          |                    | 29           | 1350.00   | Dual mono; high-current MOS-FET design. High-current MOS-FET design. Multi-room remote system component; includes seven-band EQ. Four-channel amp; multi-room remote system component; includes four-channel, three-band EQ. |   |
|                  | PA750   | B  | 0.01         | No               | 20                    | 100                        | No                         | 75                                   | 150                                  | 20-20                                    | AB                        | 1.5                  | 100                   |                    |                          |                    | 19           | 800.00    |  |   |
|                  | CA700(RO)   | I  | 0.01         | No               | 20                    | 100                        | Yes                        | 60                                   | 100                                  | 20-20                                    | AB                        | 1.0                  | 20                    |                    |                          |                    | 18           | 1200.00   |  |   |
|                  | CA300(RO)   | I  | 0.015        | No               | 15                    | 100                        | Yes                        | 40                                   | 60                                   | 20-20                                    | AB                        | 1.2                  | 20                    |                    |                          |                    | 20           | 1700.00   |  |   |
| MARANTZ          | PM 94   | I  | 0.02         | No               | 70                    | 150                        | No                         | 140                                  | 200                                  | 20-20                                    | †                         |                      |                       | 83                 | 2.5                      | 200                | Yes          | 51        | 2000.00  | †Quarter A. MOS-FET. CD/phono direct. As above. |
|                  | PM 84D  | I  | 0.03         | No               | 30                    |                            | No                         | 100                                  | 125                                  | 20-20                                    | †                         |                      |                       |                    |                          |                    | 40           | 1100.00   |  |   |
|                  | PM 74D  | I  |              |                  |                       |                            |                            | 100                                  |                                      |  | †                         |                      |                       |                    |                          |                    | 23.1         | 750.00    |  |   |
|                  | PM 65V  | I  |              |                  |                       |                            |                            | 65                                   |                                      |  |                           |                      |                       |                    |                          |                    | 22.9         | 520.00    |  |   |
|                  | PM 25   | I  |              |                  |                       |                            |                            | 30                                   |                                      |  |                           |                      |                       |                    |                          |                    | 11.7         | 350.00    |  |   |
| MAVRICK          | Dimensional Optics AMS Stereo                             | B  | 0.05         | No               | 100                   | 700                        | No                         | 170                                  | 330                                  | 1-150                                    | A                         | 3                    | 50                    |                    |                          |                    |              | 3000.00   | Optical output devices.  |   |
|                  | Dimensional Optics AMS Stereo                             | B/M  | 0.05         | No               | 100                   | 700                        | No                         | 180                                  | 350                                  | 1-150                                    | A                         | 3                    | 50                    |                    |                          |                    |              | 5000.00   | As above.  |   |
|                  | Dimensional Optics AMS Mono                               | B/M  | 0.05         | No               | 100                   | 700                        | No                         | 280                                  | 550                                  | 1-150                                    | A                         | 3                    | 50                    |                    |                          |                    |              | 10,000.00 | As above.  |   |
| McINTOSH         | MC2500  | B  | 0.02         |                  |                       | Sel.                       | Yes                        | 500                                  | 500                                  | 20-20                                    |                           |                      |                       |                    |                          |                    | 129          | 3495.00   | Bridgeable. As above. †Balanced, 40 kilohms; unbalanced, 20 kilohms. As above. Bridgeable.   |   |
|                  | MC7270  | B  | 0.02         |                  |                       | Sel.                       | Yes                        | 270                                  | 270                                  | 20-20                                    |                           |                      |                       |                    |                          |                    | 82           | 2295.00   |  |   |
|                  | MC7200  | B  | .0005        | Yes              |                       | Sel.                       | Yes                        | 200                                  | 300                                  | 20-20                                    |                           |                      |                       |                    |                          |                    | 55           | 2595.00   |  |   |
|                  | MC754   | B  | 0.02         |                  |                       | Sel.                       | Yes                        | 100                                  | 100                                  | 20-20                                    |                           |                      |                       |                    |                          |                    | 21           | 995.00    |  |   |
| MEITNER AUDIO    | STR-55  | B  | 0.25         |                  | 75                    | 650                        | No                         | 50                                   |                                      | 0.1-100                                  | AB                        |                      | 22                    |                    |                          |                    | 18           | 1595.00   | Floating charge power supply.  |   |
|                  | MTR-101   | B/M  | 0.25         |                  | 75                    | 900                        | No                         | 100                                  | 200                                  | 0.1-100                                  | AB                        |                      | 22                    |                    |                          |                    | 21           | 3400.00   | As above.  |   |



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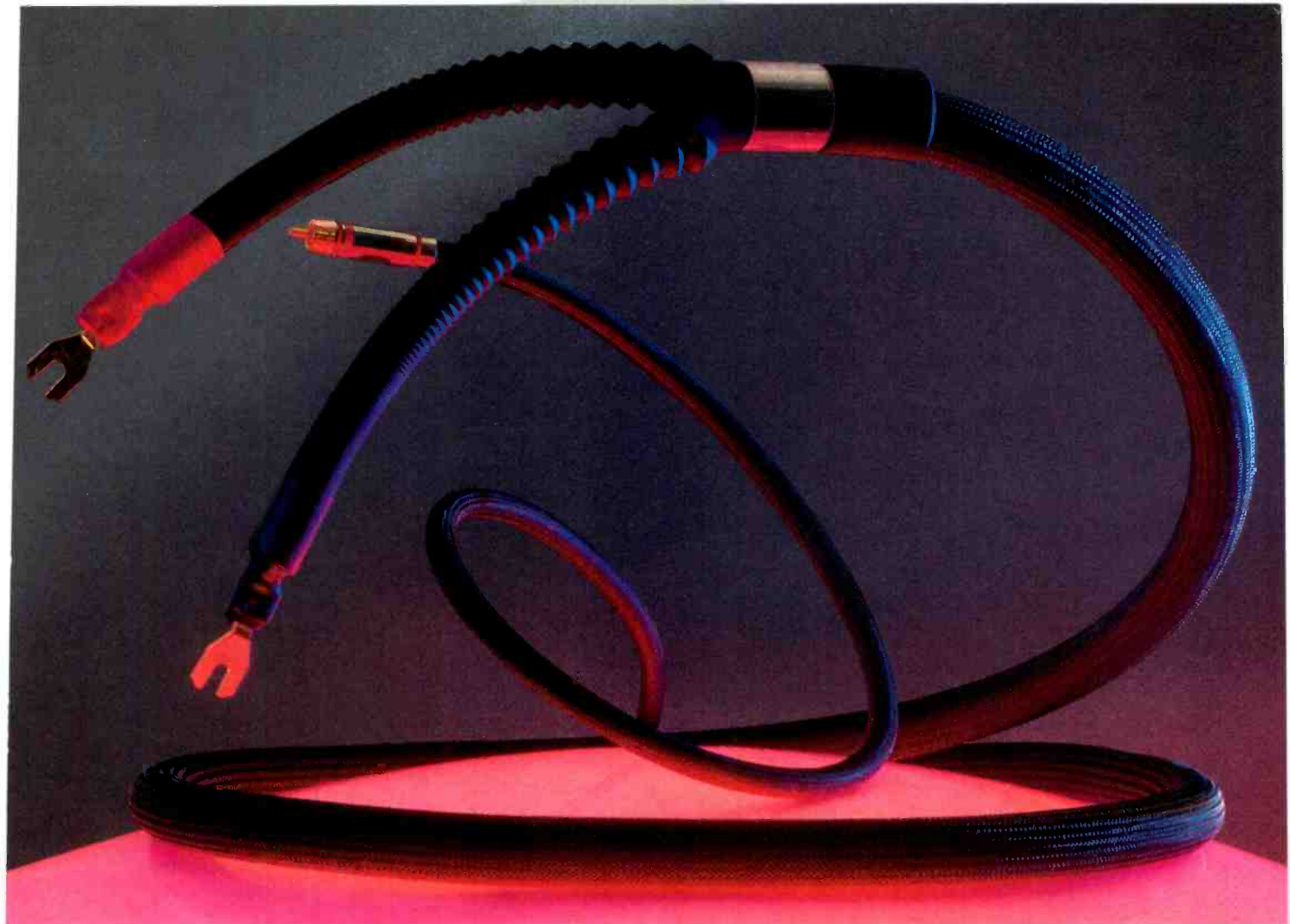
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# AMPLIFIERS

| MANUFACTURER     | Model<br>(RI) = Remote Included,<br>(RD) = Remote Optional            | Type: Integrated = I, Basic B,<br>Tube = T, Hybrid = H, Mono = M | Rated THD, %                                       | Balanced Inputs?                  | Rated Stereo Rate, V <sub>i</sub> /s | High Level Sensitivity, mV                | Does Unit Invert Polarity?            | Cont. Avg. Watts Channel, mV           | Cont. Avg. Watts Channel into 8 Ohms               | Rated Full-Power Bandwidth, Hz to kHz | POWER AMP                              |                                  |                            |                   | PREAMP                   |                    |                            |   | Price, \$   | Notes   |
|------------------|---|--|--|-----------------------------------|--------------------------------------|---|---------------------------------------|--|--|---------------------------------------|--|----------------------------------|----------------------------|-------------------|--------------------------|--------------------|----------------------------|---|---|---|
|                  |   |  |  |                                   |                                      |   |                                       |  |  |                                       | Class of Output Operation              | Dynamic Headroom, dB             | Input Impedance, Kilohms   | MM Phone S/N, -dB | MM Phone Sensitivity, mV | Moving Coil Input? | Weight, Lbs.               |   |   |   |
|                  |   |  |  |                                   |                                      |   |                                       |  |  |                                       |  |                                  |                            |                   |                          |                    |                            |   |   |   |
| MELOS AUDIO      | TM-90 ST II<br>TM-100 ST<br>Modern Triode 200<br>Modern Triode 400    | B/T<br>B/T<br>B/T/M<br>B/T/M                                     | 0.05<br>0.1<br>0.1<br>0.1                          | No<br>No<br>Yes<br>Yes            | 1.5<br>1.5<br>1.5<br>1.5             | 70<br>90<br>200<br>400                    | 70<br>90<br>200<br>400                | 20-20<br>20-20<br>20-20<br>20-20       | AB<br>AB<br>AB<br>AB                               | 3<br>3<br>3<br>3                      | 100<br>100<br>100<br>100               |                                  |                            |                   |                          |                    |                            |   | 1595.00<br>1995.00<br>2995.00<br>Pair 4500.00   |   |
| MERIDIAN         | 205   | B/M  | 0.04   | No                                | 775                                  | Yes                                       | 100                                   | 150                                    | 20-20  | †                                     | 2                                      | 11                               |                            |                   |                          |                    |                            | 13  | 1790.00<br>Pair   | †Class AA, non-switching. Signal-sense auto turn-on.  |
| MFA SYSTEMS      | M80<br>M120B<br>M200C<br>D75  | B/T/M<br>B/T/M<br>B/T/M<br>B/T                                   | 0.25<br>0.15<br>0.3<br>0.25                        | No<br>No<br>No<br>No              | 40<br>40<br>40<br>40                 | 800<br>900<br>1V<br>800                   | No<br>No<br>No<br>No                  | 75<br>120<br>200<br>75                 | 80<br>120<br>200<br>75                             | 12-150<br>14-120<br>14-120<br>12-150  | A/AB1<br>A/AB1<br>A/AB1<br>A/AB1       | 1.2<br>1.2<br>1.2<br>1.2         | 500<br>500<br>500<br>500   |                   |                          |                    |                            | 35<br>60<br>80<br>60                              | 2760.00<br>Pair 3960.00<br>Pair 5960.00<br>Pair 1960.00                                     | Class-A operation to 40 watts.<br>As above to 60 watts.<br>As above to 100 watts.<br>As above to 40 watts.                  |
| MIRROR IMAGE     | 1.1S<br>1.1SB<br>1.1S +<br>1.1M                                       | B<br>B<br>B<br>B/M   | 0.05<br>0.05<br>0.05<br>0.05                       | No<br>Yes<br>Yes<br>Yes           | 300<br>300<br>300<br>300             | 1.5V<br>1.5V<br>1.5V<br>1.5V              | No<br>No<br>No<br>No                  | 200<br>200<br>200<br>200               | 400<br>400<br>400<br>400                           | 1-300<br>1-300<br>1-300<br>1-300      | A/AB<br>A/AB<br>A/AB<br>A/AB           | 1.5<br>1.5<br>1.5<br>1.5         | 50<br>Sel.<br>Sel.<br>Sel. |                   |                          |                    |                            | 47<br>48<br>65<br>60                              | 3000.00<br>3500.00<br>4500.00<br>7000.00<br>Pair  | Soft start.<br>As above.  |
| MOTIF            | MS50<br>MS100<br>MS200  | B<br>B<br>B  | 1.0<br>1.0<br>1.0                                  |                                   |                                      |   |                                       | 50<br>100<br>200                       | 20-20<br>20-20<br>20-20                            | AB<br>AB<br>AB                        |  | 100<br>100<br>100                |                            |                   |                          |                    |                            | 40<br>60<br>95                                    | 2350.00<br>3250.00<br>5000.00   | FET.<br>As above.<br>As above.  |
| MTX              | MTA 225<br>MTA 250  | B/M<br>B/M   | 0.02<br>0.02                                       | Yes<br>Yes                        | 15<br>15                             |   |                                       | 25<br>50                               | 20-20<br>20-20                                     |                                       |  |                                  |                            |                   |                          |                    |                            |   | 549.95<br>649.95  | Bridgeable; operates into 2 ohms.<br>As above.  |
| MUSEATEX AUDIO   | Melior  | B  | 0.25   |                                   | 75                                   |   | No                                    | 100                                    |  | 0.1-100                               | AB                                     | 22                               |                            |                   |                          |                    |                            |   | 1995.00   | Floating charge power supply.   |
| MUSE ELECTRONICS | 100<br>150  | B<br>B/M   | 0.10<br>0.50                                       | No<br>No                          | 890<br>960                           | No<br>No                                  | 100<br>125                            | 200<br>250                             |  |                                       | AB<br>AB                               | 51<br>51                         |                            |                   |                          |                    |                            | 28<br>28  | 1000.00<br>950.00   | Rise-time, 2.5 μs.  |
| MUSICAL DESIGN   | D-140   | B  | 0.007  | No                                | 30                                   | 1V  | No                                    | 140                                    | 225  | 3-70                                  | AB                                     | 22                               |                            |                   |                          |                    |                            | 28  | 1195.00   | Dual-mono power supply.   |
| MUSIC REFERENCE  | RM-9  | B/T  | 0.2  | No                                | Var.                                 | No  | 100                                   | 100                                    | 20-40  | A/AB                                  | 1.5                                    | 100                              |                            |                   |                          |                    |                            | 60  | 2500.00   | Variable feedback; setup indicators; 2-, 4-, and 8-ohm taps.  |
| NAD              | 2100<br>2400<br>2600A<br>3225PE<br>3240<br>3400(RI)                   | B<br>B<br>B<br>I<br>I<br>I                                       | 0.03<br>0.03<br>0.03<br>0.03<br>0.03<br>0.03       | No<br>No<br>No<br>No<br>No<br>No  | 35<br>30<br>35<br>15<br>15<br>30     | Var.<br>Var.<br>Var.<br>200<br>160<br>100 | No<br>No<br>No<br>No<br>No<br>No      | 50<br>100<br>150<br>25<br>40<br>100    | 20-20<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20 | AB<br>AB<br>AB<br>AB<br>AB<br>AB      | 6<br>5.7<br>4<br>4<br>6<br>5.7         | 20<br>20<br>20<br>20<br>22<br>20 |                            | 75<br>76<br>80    | 0.5<br>0.55<br>0.35      | 200<br>180<br>180  | No<br>No<br>Yes            | 21<br>22<br>28½<br>13<br>15<br>24½                | 399.00<br>599.00<br>799.00<br>249.00<br>399.00<br>799.00                                    | Bridgeable.<br>As above.<br>As above.<br>As above.  |
| NAIM AUDIO       | NAIT 2<br>NAP 90<br>NAP 140<br>NAP 250<br>NAP 135                     | I<br>B<br>B<br>B<br>B/M  | 0.1<br>0.1<br>0.1<br>0.1<br>0.1                    | No<br>No<br>No<br>No<br>No        | 75<br>700<br>700<br>900<br>900       | No<br>No<br>No<br>No<br>No                | 18<br>30<br>45<br>70<br>75            | 25<br>45<br>70<br>125<br>135           | 5-20<br>5-40<br>5-40<br>5-40<br>5-40               | B<br>B<br>B<br>B<br>B                 |  |                                  |                            | 2.5               | 120                      | No                 | 11<br>12<br>14<br>30<br>33 | 795.00<br>725.00<br>1145.00<br>2795.00<br>2795.00 | Can be adapted for use as preamp. Includes 24-V power supply for NAIM preamps.<br>As above. |   |
| NAKAMICHI        | PA-7AII<br>PA-5AII  | B<br>B   | 0.05<br>0.05                                       | No<br>No                          | 140<br>140                           | No<br>No                                  | 225<br>150                            |  | 5-50<br>5-50                                       | Stasis<br>Stasis                      | 1.7<br>1.7                             | 50<br>50                         |                            |                   |                          |                    |                            | 62¾<br>47¾  | 2195.00<br>1550.00  |   |
| NEC              | Renaissance M-50<br>AVA-505   | B/M<br>I   | 0.004<br>0.03                                      | No<br>No                          | 100<br>100                           | Sel.<br>Sel.                              | No<br>No                              | 50<br>†                                | 100<br>50-20                                       | 20-20<br>50-20                        | AB<br>AB                               | 2.0<br>2.0                       |                            |                   |                          |                    |                            | 18½<br>20¾  | 375.00<br>449.00  | Variable high- and low-cut filters.<br>†Five-channel operation, 30 watts x 4 and 60 watts x 1; three-channel, 60 watts x 3. |
| NELSON-REED      | Subwoofer Controller  | B  | 0.1  | No                                | 500                                  | No  | 100                                   | 200                                    |  |                                       | AB                                     | 20                               |                            |                   |                          |                    |                            | 50  | 1600.00   | Amp/xover for subwoofers.   |
| NESTROVIC LABS   | NA-1  | B/T/M  | 0.5  | Yes                               |                                      | Sel.                                      | Var.                                  | 150                                    | 150  | 20-20                                 | AB                                     |                                  |                            |                   |                          |                    |                            | 65  | 2750.00   |   |
| NIKKO            | Alpha-400<br>Alpha-600<br>Alpha-800<br>Alpha-2000<br>IA-400<br>IA-600 | B<br>B<br>B<br>B<br>I<br>I                                       | 0.002<br>0.004<br>0.005<br>0.001<br>0.003<br>0.003 | No<br>No<br>No<br>Yes<br>No<br>No | 1V<br>1V<br>1V<br>1V<br>150<br>150   | No<br>No<br>No<br>No<br>No<br>No          | 120<br>180<br>250<br>330<br>80<br>120 | 135<br>260<br>420<br>360<br>130<br>210 | 5-80<br>5-80<br>5-80<br>5-40<br>10-60<br>10-60     | AB<br>AB<br>AB<br>AB<br>AB<br>AB      | 1.0<br>1.6<br>1.2<br>1.8<br>1.8<br>1.5 | 47<br>50<br>47<br>47<br>47<br>47 |                            | 94<br>94          | 2.5<br>2.5               | 150<br>150         | Yes<br>Yes                 | 28<br>30<br>50<br>57<br>32<br>32                  | 550.00<br>660.00<br>1300.00<br>1800.00<br>530.00<br>660.00                                  | Bridgeable.   |
| NOW HEAR THIS    | VA-1  | B  | 0.01   | Yes                               | 5                                    | 300                                       | Yes                                   | 20                                     | 30   | 20-25                                 | AB                                     | 1                                | 10                         |                   |                          |                    |                            | 7   | 150.00  | Direct video input.   |



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**M<sub>Σ</sub> Sigma Series™**  
*For Serious Audiophiles Only*



# AMPLIFIERS

| MANUFACTURER            | Model<br>(RI) = Remote Included<br>(RO) = Remote Optional | Type: Integrated = I, Basic = B,<br>Tube = T, Hybrid = H, Mono = M | Rated THD, % | Balanced Inputs? | Rated Slew Rate, V/μs | High-Level Sensitivity, mV | Does Unit Invert Polarity? | Cont. Avg. Watts Channel into 8 Ohms | Cont. Avg. Watts Channel into 4 Ohms | Rated Full-Power Bandwidth, Hz to kHz | Class of Output Operation | POWER AMP            |                          |                   |                          |                       | PREAMP       |           |                                       | Notes  |
|-------------------------|---|--|--------------|------------------|-----------------------|----------------------------|----------------------------|--------------------------------------|--------------------------------------|---------------------------------------|---------------------------|----------------------|--------------------------|-------------------|--------------------------|-----------------------|--------------|-----------|---------------------------------------|--|
|                         |   |  |              |                  |                       |                            |                            |                                      |                                      |                                       |                           | Dynamic Headroom, dB | Input Impedance, kilohms | MM Phono S.N., dB | MM Phono Sensitivity, mV | Moving Coil Input, mV | Weight, Lbs. | Price, \$ |                                       |  |
| NRG CONTROL             | A400M   | B/M  | 0.05         | No               | 800                   | 1.8V                       | No                         | 400                                  | 800                                  | 0.4-1M                                | A                         | 1                    | 100                      |                   |                          |                       |              | 110       | 11,200.00                             | Operates in Class A up to 100 watts into 8 ohms.   |
|                         | A200S   | B  | 0.05         | No               | 600                   | 1.3V                       | No                         | 200                                  | 400                                  | 0.4-1M                                | A                         | 1                    | 100                      |                   |                          |                       | 110          | 5600.00   |                                       |  |
|                         | 400S  | B  | 0.05         | No               | 800                   | 1.8V                       | No                         | 400                                  | 800                                  | 0.4-1M                                | A/AB                      | 1                    | 100                      |                   |                          |                       | 110          | 5600.00   |                                       |  |
| OCTAVE RESEARCH         | OR-1  | B  | 0.9          | No               |                       |                            | No                         | 85                                   | 170                                  | 20-20                                 | A/AB                      | 0                    | 100                      |                   |                          |                       |              | 66        | 3650.00                               | Dual mono; no negative feedback; bridges to 340 watts with Balanced Line Driver (\$850.00). No negative feedback; bridges as above.        |
|                         | OR-3  | B  | 0.9          | No               |                       |                            | No                         | 85                                   | 170                                  | 20-20                                 | AB                        | 0                    | 100                      |                   |                          |                       |              | 40        | 1900.00                               |  |
| ONIX AUDIO              | OA21  | I  | 0.01         | Yes              | 150                   | 250                        | No                         | 50                                   | 70                                   | 20-20                                 | AB                        | 1.3                  |                          | 75                | 2.0                      | 500                   | †            | 11        | 750.00                                | †Optional. Add-on power supply, Model S.O.A.P., \$525.00.  |
|                         | OA20  | I  | 0.01         | Yes              | 100                   | 250                        | No                         | 35                                   | 60                                   | 20-20                                 | AB                        | 1.0                  |                          | 75                | 1.80                     | 220                   |              | 9         | 389.00                                |  |
|                         | OA601   | B  | 0.1          | Yes              |                       | 900                        | No                         | 60                                   | 120                                  | 5-40                                  | B                         |                      |                          |                   |                          |                       | 28           | 1845.00   |                                       |  |
|                         | OA401   | B  | 0.1          | Yes              |                       | 700                        | No                         | 40                                   | 70                                   | 5-40                                  | B                         |                      |                          |                   |                          |                       | 15           | 1050.00   |                                       |  |
| ONKYO                   | M-5160  | B  | 0.09         | No               |                       |                            | No                         | 150                                  |                                      | 20-20                                 | AB                        |                      | 50                       |                   |                          |                       |              | 20.1      | 360.00                                | Dual D/A converters. A/V amp; with universal remote, Model A-RV400M, \$450.00. Dual mono. As above. As above; dual D/A converters.         |
|                         | Integra M-502   | B  | 0.003        | No               |                       |                            | No                         | 140                                  |                                      | 20-20                                 | AB                        |                      | 20                       |                   |                          |                       |              | 40.8      | 650.00                                |  |
|                         | Integra M-504   | B  | 0.003        | No               |                       |                            | No                         | 165                                  |                                      | 20-20                                 | AB                        |                      | 20                       |                   |                          |                       |              | 46        | 830.00                                |  |
|                         | A-8200(RI)  | I  | 0.06         | No               |                       |                            | No                         | 60                                   | 100                                  | 20-20                                 | AB                        |                      | 80                       | 2.5               | Yes                      | 15.9                  | 320.00       |           |                                       |  |
|                         | Integra A-8500  | I  | 0.008        | No               |                       |                            | No                         | 80                                   | 120                                  | 20-20                                 | AB                        |                      | 93                       | 2.5               | Yes                      | 27.5                  | 420.00       |           |                                       |  |
|                         | Integra A-8700  | I  | 0.008        | No               |                       |                            | No                         | 105                                  | 160                                  | 20-20                                 | AB                        |                      | 94                       | 2.5               | Yes                      | 29.7                  | 530.00       |           |                                       |  |
|                         | Integra A-8800  | I  | 0.008        | No               |                       |                            | No                         | 100                                  |                                      | 20-20                                 | AB                        |                      | 94                       | 2.5               | Yes                      | 32                    | 850.00       |           |                                       |  |
|                         | A-RV400(RI)   | I  | 0.08         | No               |                       |                            | No                         | 100                                  |                                      | 20-20                                 | AB                        |                      | 80                       | 2.5               | No                       | 20.1                  | 400.00       |           |                                       |  |
|                         | Grand Integra M-508                                       | B  | 0.003        | No               |                       |                            | No                         | 200                                  |                                      | 20-20                                 | AB                        |                      | 20                       |                   |                          |                       | 55.1         | 1200.00   |                                       |  |
|                         | Grand Integra M-510                                       | B  | 0.005        | No               |                       |                            | No                         | 300                                  | 500                                  | 20-20                                 | AB                        |                      | 20                       |                   |                          |                       | 138          | 4500.00   |                                       |  |
| Grand Integra A-G10(RI) | I   | 0.008  | No           |                  |                       | Yes                        | 135                        | 240                                  | 20-20                                | AB                                    |                           | 50                   |                          |                   |                          | 66.1                  | 3000.00      |           |                                       |  |
| PARASOUND               | HCA-2200  | B  | 0.05         |                  | 125                   | 250                        | No                         | 200                                  | 385                                  | 5-100                                 | A/AB                      | 1.5                  | 50                       |                   |                          |                       |              | 19        | 895.00                                | Bridges to 500 watts. Bridges to 260 watts; phone input jacks. Jacks as above. C-MOS input switching; variable loudness contour. As above. |
|                         | HCA-800II   | B  | 0.05         |                  | 100                   | 250                        | No                         | 90                                   | 140                                  | 8-90                                  | A/AB                      | 1.5                  | 30                       |                   |                          |                       |              |           | 395.00                                |  |
|                         | HCA-500   | B  | 0.2          |                  | 63                    | 250                        | No                         | 50                                   | 75                                   | 10-40                                 | AB                        | 1.2                  | 30                       | 75                | 1.5                      | 250                   | 16           | 285.00    |                                       |  |
|                         | C/HD-650  | I  | 0.1          |                  | 55                    | 110                        | No                         | 65                                   | 80                                   | 20-40                                 | AB                        | 1.5                  | 47                       |                   |                          |                       | 17           | 330.00    |                                       |  |
|                         | C/HD-350  | I  | 0.15         |                  | 45                    | 110                        | No                         | 35                                   | 55                                   | 20-40                                 | AB                        | 1.5                  | 47                       | 75                | 1.5                      | 250                   |              | 12½       | 220.00                                |  |
| PHILIPS                 | FA-80   | I  | 0.08         | No               |                       | 150                        | No                         | 100                                  | 140                                  | 20-20                                 | A/AB                      |                      | 33                       | 86                | 2.5                      | Yes                   | 32           | 599.00    | 20 watts per channel in Class-A mode. |  |
|                         | FA-50   | I  | 0.03         | No               |                       | 150                        | No                         | 70                                   | 95                                   | 20-20                                 | AB                        |                      | 33                       | 86                | 2.5                      | Yes                   | 25           | 399.00    |                                       |  |
| PIONEER                 | A-71  | I  | 0.003        | No               |                       |                            | No                         | 120                                  | 170                                  | 20-20                                 | AB                        |                      | 50                       | 95                | 2.5                      | 200                   | Yes          | 60        | 1100.00                               | Optical input and output.  |
|                         | VSA-1000  | I  | 0.005        | No               |                       |                            | No                         | 100                                  |                                      | 20-20                                 | AB                        |                      | 30                       | 83                | 2.5                      | 150                   | No           | 27        | 1000.00                               |  |
|                         | A-91D   | I  | 0.003        | No               |                       |                            | No                         | 120                                  | 170                                  | 20-20                                 | AB                        |                      | 50                       | 95                | 2.5                      | 200                   | Yes          | 65        | 1600.00                               |  |
|                         | A-757   | I  | 0.003        | No               |                       |                            | No                         | 100                                  | 135                                  | 20-20                                 | AB                        |                      | 50                       |                   | 2.5                      | 200                   | Yes          | 42        | 750.00                                |  |
|                         | M-91  | B  | 0.003        | No               |                       |                            | No                         | 200                                  | 200                                  | 20-20                                 | AB                        | 1.0                  | 50                       |                   |                          |                       | 60           | 1400.00   |                                       |  |
|                         | A-335   | I  | 0.02         | No               |                       |                            | No                         | 40                                   | 50                                   | 20-20                                 | AB                        |                      | 40                       | 89                | 2.5                      | 150                   | No           | 16        | 250.00                                |  |
| PRIMARE SYSTEMS         | Series 928  | B/M  | 0.08         | Yes              | 40                    |                            | No                         | 100                                  | 200                                  |                                       | AB                        |                      |                          |                   |                          |                       |              | 37½       | 5500.00                               | Pair   |
| PRODIGY AUDIO LABS      | Mono 150  | B/T/M  |              | No               | 35                    |                            |                            | 150                                  |                                      | 5-100                                 | AB                        |                      | 240                      |                   |                          |                       |              | 100       | 7000.00                               | Output transformerless. MOS-FET; bipolar design.   |
|                         | MAX FET 100   | B/M  | 0.004        | No               | 75                    |                            |                            | 100                                  |                                      | 15-50                                 | AB                        |                      | 47                       |                   |                          |                       |              | 42        | 1695.00                               |  |
| PROTON                  | AM-656(RI)  | I  | 0.02         | Yes              |                       | 150                        | No                         | 60                                   | 120                                  | 10-50                                 |                           | 6.0                  | 15                       | 85                | 2.5                      | 150                   | Yes          | 28.6      | 700.00                                |  |
|                         | D-1200  | I  | 0.02         | Yes              |                       | 150                        | No                         | 100                                  | 200                                  | 10-40                                 |                           | 6.0                  | 12                       | 120               |                          |                       | 33           | 699.00    |                                       |  |
|                         | AA-1150   | I  | 0.02         | Yes              |                       | 150                        | No                         | 50                                   | 100                                  | 12-70                                 |                           | 7.0                  |                          | 115               |                          |                       | 25.3         | 519.00    |                                       |  |
| PS AUDIO                | 200CX   | B  | 0.01         | No               | 200                   |                            | No                         | 200                                  | 400                                  | 5-20                                  | AB                        | 0.5                  | 100                      |                   |                          |                       |              | 70        | 1950.00                               |  |
|                         | 100C  | B  | 0.01         | No               | 120                   |                            | No                         | 120                                  | 200                                  | 5-20                                  | AB                        | 0.5                  | 100                      |                   |                          |                       |              | 35        | 1195.00                               |  |
| PSE                     | Studio IV   | B  | 0.01         | No               | 100                   | 1.2V                       | No                         | 100                                  | 195                                  | 0-100                                 | A/AB                      | 1                    | 50                       |                   |                          |                       |              | 27        | 850.00                                |  |
|                         | Studio V  | B/M  | 0.2          | Yes              | 200                   | 1.2V                       | No                         | 120                                  | 230                                  | 0-500                                 | A/AB                      | 1                    | 50                       |                   |                          |                       |              | 27        | 800.00                                |  |
| QED                     | A240CDII  | I  | 0.1          | No               |                       | 300                        |                            | 40                                   | 65                                   | 5-30                                  | AB                        |                      |                          | 72                | 3                        | No                    | 12           | 585.00    |                                       |  |
|                         | A240SAMKII  | I  | 0.1          | No               |                       | 300                        |                            | 40                                   | 65                                   | 5-30                                  | AB                        |                      |                          | 72                | 3                        | Yes                   | 12           | 750.00    |                                       |  |
|                         | A270MKII  | I  | 0.1          | No               |                       | 300                        |                            | 50                                   | 85                                   | 5-30                                  | AB                        |                      |                          | 72                | 3                        | Yes                   | 16           | 900.00    |                                       |  |
| QSC                     | 1080  | B  | 0.1          | Yes              | 12                    | 800                        | †                          | 35                                   | 50                                   | 5-120                                 | AB                        | 2                    | ††                       |                   |                          |                       |              | 12        | 538.00                                | †Polarity inversion with unbalanced inputs only. ††Balanced, 20 kilohms; unbalanced, 10 kilohms. Bridgeable; headphone jacks.              |
| (Continued)             |   |  |              |                  |                       |                            |                            |                                      |                                      |                                       |                           |                      |                          |                   |                          |                       |              |           |                                       |  |

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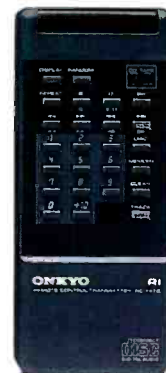
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# AMPLIFIERS

| MANUFACTURER              | POWER AMP  |  |   |  |  |   |  |   |   |  |  |  |  |  |   | PREAMP  |  |  |   |  |   |   |
|---------------------------|--|--|---|--|--|---|--|---|---|--|--|--|--|--|---|---|--|--|---|--|---|---|
|                           | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional   | Type: Integrated = I<br>Tube = T, Hybrid = H, Mono = M                   | Rated THD, %  | Balanced Inputs?   | Rated Slew Rate, V/μs  | Does Unit Invert?   | Cont. Avg. Watts   | Sensitivity, mV   | Channel Polarity?   | Rated Full-Power Channel into 8 Ohms<br>Hz to kHz  | Class of Output Operation  | Dynamic Headroom, dB   | Input Impedance, ohms  | MM Phone S/M, ohms                         | MM Phone Sensitivity, mV                      | Moving Coil Input?                                | Weight, Lbs.   | Price, \$  | Notes   |  |   |   |
|                           |  |  |   |  |  |   |  |   |   |  |  |  |  |  |   |   |  |  |   |  |   |   |
| QSC<br>(Continued)        | 1100<br>1200<br>1400<br>1700<br>MX-700<br>MX-1500<br>MX-2000<br>MPS 2300(RO)<br><br>A2300<br>A2150<br>3200<br>3350<br>3500<br>3800   | B<br>B<br>B<br>B<br>B<br>B<br>B<br>I<br><br>B<br>B/M<br>B<br>B<br>B<br>B | 0.1<br>0.1<br>0.1<br>0.1<br>0.1<br>0.1<br>0.1<br>0.1<br><br>0.1<br>0.1<br>0.1<br>0.1<br>0.1<br>0.1  | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br><br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes | 14<br>12<br>18<br>21<br>15<br>20<br>20<br>25<br><br>25<br>25<br>12<br>14<br>20<br>20 | 1V<br>1V<br>1V<br>1V<br>960<br>1V<br>1V<br>1V<br><br>1V<br>1V<br>1V<br>1V<br>1V<br>1V | †<br>†<br>†<br>†<br>†<br>†<br>†<br>†<br><br>†<br>†<br>†<br>†<br>†<br>† | 50<br>100<br>200<br>325<br>150<br>330<br>375<br>125<br><br>125<br>125<br>110<br>200<br>325<br>375 | 75<br>150<br>300<br>500<br>225<br>500<br>600<br>125<br><br>125<br>125<br>140<br>300<br>450<br>600 | 5-100<br>5-60<br>5-65<br>5-70<br>8-300<br>8-300<br>8-300<br>20-20<br><br>20-20<br>20-20<br>8-300<br>8-300<br>8-300 | AB<br>AB<br>AB<br>AB<br>AB<br>G<br>G<br>AB<br><br>AB<br>AB<br>G<br>G<br>G<br>G | 2<br>2<br>2<br>2<br>3<br>3<br>2<br>2<br><br>2<br>2<br>3<br>3<br>3<br>2 | ††<br>††<br>††<br>††<br>††<br>††<br>††<br>††<br><br>††<br>††<br>††<br>††<br>††<br>†† |  |   |   |  |  |   | 12<br>24<br>34<br>54<br>25<br>47<br>70<br>29<br><br>29<br>26<br>26<br>41<br>50<br>75 | 568.00<br>598.00<br>798.00<br>1248.00<br>598.00<br>1098.00<br>1498.00<br>1168.00<br><br>788.00<br>598.00<br>958.00<br>1248.00<br>1488.00<br>1958.00 | As above.<br>Bridgeable.<br>As above.<br>As above.<br>As above.<br>As above.<br>As above.<br>Mixer/amp; 70 V switchable.<br>70 V switchable.<br>As above.<br>Bridgeable.<br>As above.<br>As above.<br>As above. |
| QUAO                      | 306<br><br>606   | B<br><br>B   | 0.01<br><br>0.01  | No<br><br>No   |  | 500<br><br>500  | Yes<br><br>Yes   | 50<br><br>140   | 80<br><br>220   | 20-20<br><br>20-20   |  | 1.5<br><br>1.5   | 20<br><br>20   |  |   |   |  | 699.00   | Feed forward error-correction circuitry; current dumping. As above.   |  |   |   |
| QUICKSILVER AUDIO         | KT88   | B/T/M  |   | No   |  |   | No   | 60  | 60  | 13-55  | AB   |  | 100  |  |   |   | 30   | 925.00   | Operates into 0.5 ohm.  |  |   |   |
| RADFORD                   | STA35<br><br>MA50  | B/T<br><br>B/T/M   | 0.25<br><br>0.25  | No<br><br>No   | 15<br><br>15   | 750<br><br>750  | No<br><br>No   | 35<br><br>50  | 50<br><br>65  | 20-20<br><br>20-20   | AB2<br><br>A   | 1.5<br><br>1.8   | 100<br><br>100   |  |   |   | 37½<br><br>35½   | 2495.00<br>2115.00   | 8 amps, peak to peak; LED bias setup. As above but 15 amps.   |  |   |   |
| REVOX                     | B242-S<br>B242<br>B250-S(RO)<br>B250(RO)   | B<br>B<br>I<br>I   | 0.01<br>0.01<br>0.015<br>0.015  | Yes<br>Yes<br>No<br>No   | 80<br>80   | Adj.<br>Adj.<br>250<br>250  | No<br>No<br>No<br>No   | 200<br>200<br>100<br>60   | 300<br>300<br>150<br>90   | 20-20<br>20-20<br>20-20<br>20-20   | AB<br>AB<br>AB<br>AB   | 3<br>3<br>2.8<br>2.8   |  | 80<br>80                                   | 2.5<br>2.5                                    | †<br>†  | 37½<br>37½<br>33<br>28                                 | 3500.00<br>3000.00<br>2500.00<br>1275.00   | Bridgeable.<br>As above.<br>†Optional.  |  |   |   |
| ROCKFORD FOSGATE          | RF-2000  | B  | 0.05  | No   | 80   |   | No   | 250   | 350   | 20-20  | AB   | 7  | 20   |  |   |   |  |  | Bridgeable; chassis on floating ground.   |  |   |   |
| ROTEL                     | RA820BX3<br>RA840BX3<br>RB850<br>RB870BX   | I<br>I<br>B<br>B   | 0.3<br>0.03<br>0.03<br>0.03   | No<br>No<br>No<br>No   |  | 150<br>150  | No<br>No<br>No<br>No   | 30<br>50<br>50<br>100   | 20-20<br>20-20<br>4-100<br>4-100  | AB<br>AB<br>AB<br>AB   |  |  | 80<br>80   | 2.5<br>2.5                                 | 170<br>170                                    | Yes<br>Yes  | 15½<br>16  | 299.00<br>399.00<br>299.00<br>499.00   | Bridgeable.<br>As above.  |  |   |   |
| JEFF ROWLAND DESIGN GROUP | 1<br>3<br><br>5<br><br>7   | B<br>B/M<br><br>B<br><br>B/M   | 0.035<br>0.08<br><br>0.075<br><br>0.045   | Yes<br>Yes<br><br>Yes<br><br>Yes   | 70<br>45<br><br>75<br><br>50   | 136<br>136  | No<br>No<br><br>No<br><br>No   | 60<br>100<br><br>150<br><br>350   | 120<br>200<br><br>300<br><br>700  | 0.3-300<br>0.15-175<br>0.15-250<br>0.15-160  | A/AB<br>A/AB<br><br>A/AB<br><br>A/AB   | Sel.<br>Sel.<br><br>Sel.<br><br>Sel.                                   |  |  |   |   | 46<br>46<br><br>103<br><br>135                         | 2950.00<br>4550.00<br>Pair<br>5500.00<br>9800.00 Pair  | Bridges to 240 watts.<br><br>Bridges to 570 watts.  |  |   |   |
| SAE                       | I102<br><br>A202<br><br>A502<br>P50<br>X10A  | I<br><br>B<br><br>B<br>B<br>B  | 0.02<br><br>0.02<br><br>0.02<br>0.017<br>0.01   | No<br><br>No<br><br>No<br>Yes<br>Yes   |  | 150<br><br>25   | No<br><br>No<br><br>No<br>No<br>No                                     | 60<br><br>100<br><br>200<br>70<br>100   | 90<br><br>150<br><br>300<br>115<br>150  | 20-20<br><br>20-20<br><br>20-20<br>20-20<br>20-20  | AB<br><br>AB<br><br>AB<br>AB<br>A  | 1.0<br><br>1.2<br><br>1.2<br>3.0<br>1.5                                | 82   |  | Yes   | 26<br><br>31<br><br>48<br>21<br>35                | 499.00<br><br>499.00<br><br>799.00<br>600.00<br>900.00 | Programmable, digital tone memories. Switching for two pairs of speakers. Bridges to 600 watts.<br>Bridges to 375 watts. |   |  |   |   |
| SANSUI                    | Vintage B-2102MOS<br>Vintage B-2102<br>Vintage AU-X911DG<br>Vintage AU-X711<br>Vintage AU-X701<br>Vintage AU-X611AV<br>Vintage AU-X501<br>Vintage AU-X301i<br>B-3000<br>B-1000<br>A-2000<br>A-1000 | B<br>B<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>B<br>B<br>I<br>I            | 0.008<br>0.003<br>0.005<br>0.005<br>0.005<br>0.008<br>0.005<br>0.05<br>0.05<br>0.05<br>0.07<br>0.07 | Yes<br>No<br>Yes<br>Yes<br>Yes<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No                     | 150<br>350<br>180<br>180<br>180<br><br>100<br>200                                    | 100<br>100<br>150<br><br>150<br><br>150<br>150  | No<br>No<br>No<br><br>No<br><br>No<br>No<br>No<br>No<br>No             | 110<br>200<br>100<br><br>100<br><br>80<br>80<br>65  | 150<br>350<br>120<br><br>120<br><br>130<br>130  | 10-20<br>20-20<br>20-20<br><br>20-20<br><br>20-20<br>20-20<br>20-20  | A<br><br>A<br><br>A<br><br>A<br>A<br>A<br>A<br>A<br>A<br>A                     | <br><br>1.4<br>1.5<br>1.5<br>1.5<br>1.4<br>1.4<br>1.4<br>1.4           | 56<br>47<br>47<br>47<br>47<br>47<br>47<br>47   | <br>86<br>88<br>88<br>87<br>83<br>80<br>75 | 2.5<br>2.5<br>2.5<br>2.5<br>2.5<br>3.5<br>3.5 | 210<br><br>210<br>210<br>150<br>210<br>150<br>120 | Yes<br><br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>No       | 77<br>39<br>40<br>40<br>37<br>24¼<br>23¾<br>30<br><br>21¼<br>15½<br>12½<br>9½  | 3750.00<br>1200.00<br>1250.00<br>975.00<br>775.00<br>750.00<br>450.00<br>350.00<br><br>260.00<br>210.00<br>260.00<br>200.00 | MOS-FET.<br><br>1-bit D/A converter.<br><br>Video buffer amps and processor loops.   |   |   |
| SESCOM                    | PO-3<br><br>PO-4<br>PO-5<br>SH-1 MK II   | B<br><br>B/M<br>I<br>B   | 0.02<br><br>0.02<br>0.02<br>0.01  | No<br><br>No<br>No<br>No   |  | 750<br>750<br>750<br>750  | No<br>No<br>No<br>No   | 2<br>4<br>2<br>10   |   | 50-15<br>50-15<br>50-15<br>20-20   |  | 100<br>100<br>100<br>50  |  | 70   | 1.8   | 220   | No   | ½<br>½<br>½<br>12  | 71.40<br>52.00<br>120.00<br>290.00  | Requires PO-1 power supply, \$71.40. As above.                                       |   |   |
| SHERWOOD                  | AI-1110<br><br>AI-1210R(RI)<br>AM-7040   | I<br><br>I<br>B  | 0.2<br><br>0.05<br>0.03   | No<br><br>No<br>Yes  |  | 150<br>150<br>1V  |  | 50<br>100<br>200  |   | 40-20<br>20-20<br>20-20  | AB<br>AB<br>AB   | 47<br>47<br>47   | 75<br>79   | 2.5<br>2.5                                 | 150<br>200                                    | No<br>No  | 15.4<br>27.5<br>56.2                                   | 159.95<br>329.95<br>599.95   | Direct inputs; surround sound. As above. High-speed MOS-FET.  |  |   |   |
| SHURE HTS                 | HTS50SPA   | B  | 0.1   | No   |  | 1V  | No   | 100   |   | 20-20  | AB   | 1.5  |  |  |   |   | 27   | 999.00   | Bridgeable; includes processing for Shure HTS speakers.   |  |   |   |



Salem

***the refreshest***

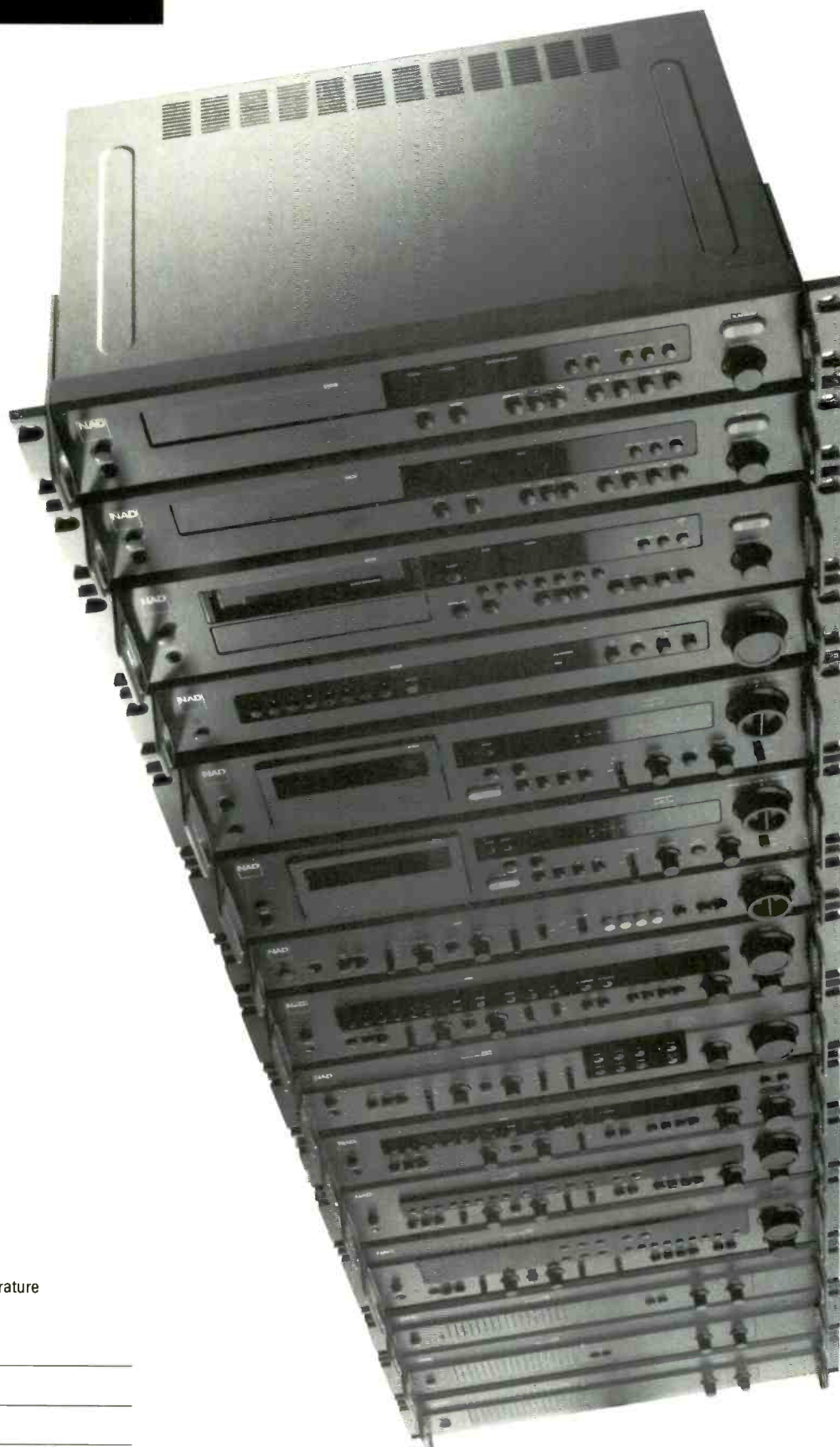
SURGEON GENERAL'S WARNING: Quitting Smoking  
Now Greatly Reduces Serious Risks to Your Health.

17 mg. "tar", 1.2 mg. nicotine av. per cigarette by FTC method.



# The Monitor Series

*Designed not to a price, but to a standard.*



5300 CD Player  
5100 CD Player  
5170 Multi-CD Player

4300 Tuner

6100 Cassette Deck  
6300 Cassette Deck

1300 Preamplifier  
1700 Preamplifier/Tuner

3400 Integrated Amplifier

7100 Receiver  
7400 Receiver  
7600 Receiver

2100 Power Amplifier  
2400 Power Amplifier  
2600 Power Amplifier

Please send Monitor Series literature  
and dealer locations to:

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A10

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# Your last audio system?

The sole point of audio is to fully enjoy music. Alone, or with friends and family. At a party, dinner, or with video and popcorn. It should be easy to do.

The NAD Monitor Series is designed to provide this enjoyment, flexibility, and ease of use. To unobtrusively provide music in all its richness and variety. Selection after selection. Day after day. Year after year.

The result of an international three-year development program, the Monitor Series has, since its introduction, garnered accolades from the audio press, customers, and dealers worldwide. Each component establishes new standards in its category.

And, as a true component system, The Monitor Series is designed for change and growth. Yours.

## Play as you go

The standard route to improving your hi-fi system has been the replacement of components. Rather than designing in this fashion, we chose to create a system that would make "planned obsolescence" itself obsolete. We call our approach The NAD Building Blocks Design Philosophy. You can start with an amp and preamp. Or one of our outstanding receivers. Add components, as usual, say a second tape deck, or our superb multi-CD player. But there's more.

## Don't junk the receiver, add an amplifier

When the time is right (you move your system to a larger room, or new living quarters, or acquire new speakers, for instance) add a second amplifier.

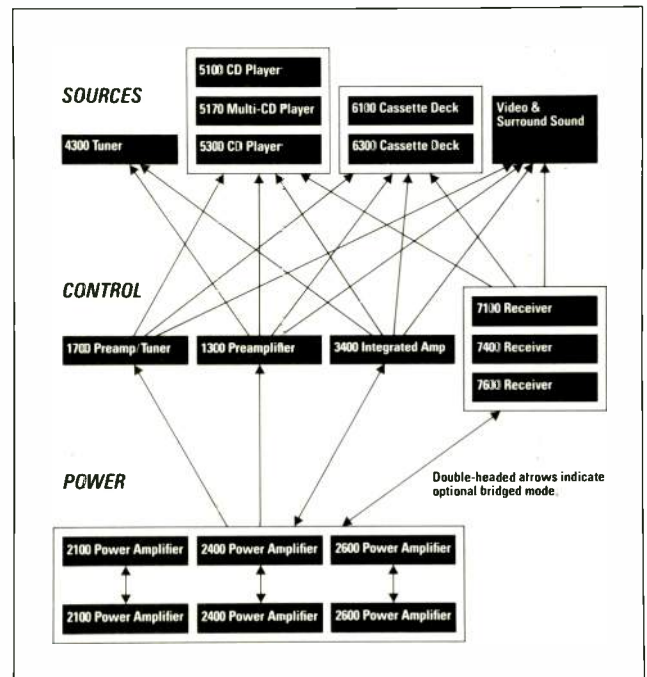
Why a second amplifier? Because every Monitor Series power amp (or receiver, or integrated amp) can be bridged into mono, with an impressive increase in power and dynamic range.

Our 100 watt amplifier alone, for example, provides up to 300 watts of precisely controlled dynamic power, due to our exclusive Power Envelope circuitry. Bridge it with another 100 watt amplifier and you'll have up to 500 watts of clean dynamic power for musical peaks.

The NAD Monitor Series is the only audio component system which provides this option *across the board*.



For the music, pure and simple.



The Monitor Series provides numerous paths for enhanced listening. You start with a superb remote control audio system. You don't have to overbuy. And

you can upgrade your system repeatedly, without ever trading in. Your investment will never become obsolete.

## Unified remote control

And all the while, no matter what size system you choose, you will be using our Unified Remote Control. This advanced design remote drives the entire Monitor Series\*, and is a pleasure to hold in your hand and use.

## Only at selected knowledgeable dealers

We invite you to visit one of our carefully selected dealers for a complete listening session. Call us at (617) 762-0202 for the name of your nearest dealer, or send the coupon for detailed literature, to: NAD(USA), Inc., 575 University Avenue, Norwood, Massachusetts 02062.

\*The 5170 Multi-CD Player, due to its remote programming capabilities, has its own full-function remote control.



# AMPLIFIERS

| MANUFACTURER       | Model             | Type | Type Integrated | Rated THD, % | Balanced Inputs? | Rated Stereo Rate, V/μs | High-Level Sensitivity, mV | Does Unit Invert Polarity? | Cont. Avg. Watts Channel into 8 Ohms | Cont. Avg. Watts Channel into 4 Ohms | Rated Full-Power Bandwidth, Hz to kHz | Class of Output Operation | Dynamic Headroom, dB | Input Impedance, kOhms | MM Phone S.N. - dB | MM Phone Sensitivity, mV | Moving Coil Input? | Weight, Lbs. | Price, \$ | Notes   |
|--------------------|-------------------|------|-----------------|--------------|------------------|-------------------------|----------------------------|----------------------------|--------------------------------------|--------------------------------------|---------------------------------------|---------------------------|----------------------|------------------------|--------------------|--------------------------|--------------------|--------------|-----------|---|
|                    |                   |      |                 |              |                  |                         |                            |                            |                                      |                                      |                                       |                           |                      |                        |                    |                          |                    |              |           |   |
| SILBERSAND         | FM-40(RI)         | B/M  |                 | Yes          |                  | 1V                      | No                         |                            | 600                                  |                                      | A AB                                  | †                         |                      |                        |                    |                          | 71                 | 35,000. Pair |           | †Balanced, 2.7 kilohms; unbalanced, 47 kilohms. Class-A operation up to 100 watts; liquid-cooled.                         |
| SIMA               | W-2003            | B    | 0.05            | No           | 60               | 1.5V                    | No                         | 225                        | 450                                  | 20-20                                | AB                                    | 22                        |                      |                        |                    |                          | 45                 | 1350.00      |           | Bridges to 850 watts.   |
|                    | W-2002            | B    | 0.05            | No           | 60               | 1V                      | No                         | 125                        | 200                                  | 20-20                                | AB                                    | 22                        |                      |                        |                    |                          | 23                 | 850.00       |           | Bridges to 400 watts.   |
|                    | W-3050            | B    | 0.05            | No           | 60               | 500                     | No                         | 50                         | 100                                  | 20-20                                | AB                                    | 22                        |                      |                        |                    |                          | 30                 | 995.00       |           | Bridges to 200 watts; high-current design.  |
|                    | PW-3000           | I    | 0.09            | No           | 60               | 200                     | No                         | 50                         | 90                                   | 20-20                                | AB                                    | 18                        | 80                   | 2.75                   | 160                | Yes                      | 15                 | 695.00       |           |   |
| SONANCE            | VCA1(RI)          | I    | 0.05            | No           | 20               | 500                     | No                         | 60                         | 100                                  | 20-20                                | AB                                    | 1.1                       | 47                   |                        |                    |                          |                    | 1500.00      |           | Includes ASW1 in-wall subwoofer (see "Loudspeakers") and remote wall-mount volume control.                                |
| SONOGRAPH          | SA120             | B    | 1.0             |              |                  | 1.1V                    | No                         | 120                        |                                      | 20-20                                | AB                                    |                           | 100                  |                        |                    |                          | 40                 | 995.00       |           | FET.  |
| SONY ES            | TA-N77ES          | B    | 0.0018          |              | 150              |                         | No                         | 200                        | 270                                  | 10-100                               | AB                                    | 1.8                       | 2                    |                        |                    |                          | 60 3/4             | 1200.00      |           | Bridges to 580 watts.   |
|                    | TA-N55ES          | B    | 0.005           |              | 125              |                         | No                         | 110                        | 150                                  | 10-100                               | AB                                    | 2                         | 2                    |                        |                    |                          | 40 1/2             | 500.00       |           | Bridges to 300 watts.   |
|                    | TA-N110           | B    | 0.08            |              | 180              |                         | No                         | 45                         | 55                                   | 10-40                                | AB                                    | 1.3                       | 4                    |                        |                    |                          | 12                 | 300.00       |           | Bridges to 100 watts; surround amp.   |
| SOUND-CRAFTSMEN    | Pro-Power Ten     | B    | 0.05            |              | 40               | 120                     | No                         | 600                        | 900                                  | 20-20                                | AB                                    | 1.5                       | 32                   |                        |                    |                          | 60                 | 1399.00      |           | Two-, three-, or four-channel operation; MOS-FET; LED power meters.   |
|                    | Pro-Power Four    | B    | 0.05            |              | 50               | 120                     | No                         | 205                        | 300                                  | 20-20                                | AB                                    | 1.7                       | 32                   |                        |                    |                          | 30                 | 849.00       |           | MOS-FET; LED power meters; without meters, Model Pro-Power Three, \$749.00; 17-inch-width, Model Power Four-17, \$849.00. |
|                    | A5002             | B    | 0.05            |              | 50               | 120                     | No                         | 250                        | 375                                  | 20-20                                | H                                     | 2.1                       | 32                   |                        |                    |                          | 52                 | 949.00       |           | Signal-tracking supply; LED meters.   |
|                    | Pro-Reference Two | B    | 0.05            |              | 50               | 120                     | No                         | 100                        | 190                                  | 20-20                                | AB                                    | 3.0                       | 32                   |                        |                    |                          | 30                 | 699.00       |           | MOS-FET; LED meters; without meters, Model Pro-Reference One, \$599.00.   |
|                    | Pro-Power One     | B    | 0.05            |              | 50               | 120                     | No                         | 205                        | 300                                  | 20-20                                | AB                                    | 1.7                       | 32                   |                        |                    |                          | 23                 | 579.00       |           | MOS-FET; operates into 2 ohms.  |
|                    | PCR800            | B    | 0.05            |              | 40               | 120                     | No                         | 205                        | 300                                  | 20-20                                | AB                                    | 1.7                       | 32                   |                        |                    |                          |                    | 539.00       |           |   |
| SOUND ENGINEERING  | PFM-3             | B    | 0.1             | Yes          | 100              | 1.8V                    | No                         | 150                        | 300                                  | 1-100                                | A AB                                  | 0.5                       | 20                   |                        |                    |                          | 55                 | 1850.00      |           |   |
| SOUNDSTREAM        | DA-1              | B    | 0.05            | No           | 35               | 1V                      | No                         | 200                        | 300                                  | 20-20                                | AB                                    | 1.8                       | 22                   |                        |                    |                          | 35                 | 1195.00      |           | Bridgeable; infrared speaker selector.  |
| SOUNDWAVE FIDELITY | Symphony 2        | B    | 0.09            | No           | 200              | 1.1V                    | No                         | 100                        | 140                                  | 0.2-60                               | AB                                    | 1.0                       | 25                   |                        |                    |                          | 25 1/2             | 795.00       |           |   |
|                    | Symphony 4        | B    | 0.15            | No           | 200              | 1.6V                    | No                         | 200                        | 400                                  | 0.2-60                               | AB                                    | 2.0                       | 25                   |                        |                    |                          | 51                 | 2000.00      |           |   |
| SPECTRAL AUDIO     | DMA-200           | B    | 0.01            | Yes          | †                | 200                     | No                         | 200                        | 380                                  | 0-2M                                 | A                                     | 2                         |                      |                        |                    |                          | 87                 | 5995.00      |           | †1000 V/μs.   |
|                    | DMA-50            | B    | 0.01            | Yes          | 500              | 200                     | No                         | 80                         | 160                                  | 0-2M                                 | AB                                    | 6                         |                      |                        |                    |                          | 19                 | 2495.00      |           | Bridgeable.   |
| SPECTRASCAN        | BPA-101B          | B    | 0.07            | No           | 40               | 1V                      | No                         | 120                        | 175                                  | 2-120                                | AB                                    | †                         | 10                   |                        |                    |                          | 40                 | 1895.00      |           | †Regulated power supply. Bridges to 350 watts.  |
| J. E. SUGDEN       | A25               | I    | 0.035           | Yes          | 4.8              | 150                     | No                         | 29                         |                                      | 20-20                                | AB                                    |                           |                      | 2.8                    |                    | No                       | 12                 | 495.00       |           |   |
|                    | A28II             | I    | 0.05            | Yes          | 8                | 150                     | No                         | 44                         |                                      | 20-20                                | AB                                    |                           |                      | 3.5                    |                    | Yes                      | 16                 | 775.00       |           | Bridges to 95 watts.  |
|                    | A48III            | I    | 0.04            | Yes          | 8                | 150                     | No                         | 52                         |                                      | 20-20                                | AB                                    |                           |                      |                        |                    |                          | 17                 | 875.00       |           | Bridges to 108 watts.   |
|                    | P28               | B    | 0.03            | Yes          | 8                | 150                     | No                         | 47                         |                                      | 20-20                                | AB                                    |                           |                      |                        |                    |                          | 15                 | 595.00       |           | Bridges to 100 watts.   |
|                    | P128              | B/M  | 0.02            | Yes          | 7                | 600                     | No                         | 80                         | 106                                  | 20-20                                | AB                                    |                           |                      |                        |                    |                          | 32                 | 1595.00      |           |   |
|                    | AV51              | B    | 0.09            | Yes          | 48               | 150                     | No                         | 70                         | 138                                  | 20-20                                | B                                     |                           |                      |                        |                    |                          | 27                 | 2495.00      |           |   |
| SUMO               | Polaris           | B    | 0.05            | No           | 65               |                         | No                         | 100                        | 175                                  | 20-20                                | AB                                    | 1.5                       | 47                   |                        |                    |                          | 29                 | 749.00       |           | MOS-FET.  |
|                    | Andromeda II      | B    | 0.05            | Yes          | 115              |                         | No                         | 200                        | 400                                  | 20-20                                | AB                                    | 3.0                       | 47                   |                        |                    |                          | 55                 | 1499.00      |           | As above; balanced output.  |
|                    | Ulysses           | B    | 0.05            | No           | 85               |                         | No                         | 60                         | 100                                  | 20-20                                | AB                                    | 2.0                       | 47                   |                        |                    |                          | 25                 | 549.00       |           | MOS-FET.  |
|                    | Nine Plus         | B    | 0.10            | No           | 25               |                         | No                         | 65                         | 120                                  | 20-20                                | A                                     | 1                         | 1M                   |                        |                    |                          | 35                 | 1299.00      |           | Balanced output.  |
| SUPERPHON          | Maxx 80B          | B    |                 | No           |                  |                         | No                         | 40                         | 80                                   | 0-100                                | AB                                    |                           | 50                   |                        |                    |                          | 12 1/2             | 499.00       |           | Bridges to 160 watts into 8 ohms and 80 watts into 4 ohms.  |
| SYMETRIX           | A220              | B    | 0.05            | Yes          | 15               | 500                     | No                         | 20                         | 20                                   | 20-20                                | AB                                    | 2.5                       | 10                   |                        |                    |                          | 9                  | 315.00       |           | Bridgeable.   |
|                    | SX204             | B    | 0.01            | Yes          | 6                | 150                     | No                         | 0.5                        |                                      |                                      | AB                                    |                           | 10                   |                        |                    |                          | 2                  | 269.00       |           | For high-impedance headphones.  |
| SYMPHONIC LINE     | RG 1 MK II        | B    |                 |              |                  |                         |                            | 100                        | 200                                  |                                      | AB                                    |                           |                      |                        |                    |                          | 45                 | 3595.00      |           |   |
| TANDBERG           | TPA-3016A         | B    | 0.05            | No           |                  |                         | No                         | 220                        | 400                                  |                                      | AB                                    |                           | 200                  |                        |                    |                          | 62                 |              |           |   |
|                    | TPA-3026A         | B    | 0.02            | No           |                  |                         | No                         | 150                        |                                      |                                      | AB                                    |                           | 200                  |                        |                    |                          | 31.4               |              |           |   |
|                    | TPA-3036A         | B    | 0.08            | No           |                  |                         | No                         | 100                        | 120                                  |                                      | AB                                    |                           | 100                  |                        |                    |                          | 23.4               |              |           |   |
|                    | TIA-3032A         | I    | 0.09            | No           |                  |                         | No                         | 100                        | 115                                  |                                      | AB                                    |                           | 100                  | 72                     | 75                 | 70                       | Yes                | 23           |           |   |

## The Monitor Series

*Designed not to a price, but to a standard.*



# Introducing the foundation of your new hi-fi system.

"Rarely do we encounter an audio component as thoroughly satisfying as the NAD 1700... Aside from the many notable qualities of the Model 1700, it also makes an eloquent case for the preamplifier/tuner as the heart of a component hi-fi system."

Julian Hirsch, *Stereo Review*, 6/88

If you are about to assemble a new audio system, the Monitor Series 1700 Preamplifier/Tuner deserves your consideration. Few tuners at any price can surpass the 1700's ability to deliver excellent sound under widely varying reception conditions. Few preamps can match its freedom from hum and noise, or its accurate, transparent reproduction of every audio signal.

Moreover, we have designed the 1700 to be used as the *control center* of an expandable component system. You can create a high performance audio system that goes anywhere from 50 to 500 watts, using our new Monitor Series power amplifiers. In fact, you can easily start a system with lower power and upgrade later by bridging an identical amp. And our unified remote control will drive the NAD Monitor Series cassette decks and CD players.

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listening. We invite you to do so at one of our carefully selected dealers. You may be surprised at what you hear.

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Name

Address

City

State  Zip

A10



# AMPLIFIERS

| MANUFACTURER    | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional      | Type Integrated = I, Basic = B,<br>Tube = T, Hybrid = H, Mono = M | Rated THD, %                                       | Balanced Inputs?                 | Rated Slew Rate, V/μs | Does Limit Invert Polarity? | Cont. Avg. Watts/Channel into 8 Ohms | Cont. Avg. Watts/Channel into 4 Ohms | Rated Full-Power Bandwidth,<br>Hz to kHz           | POWER AMP                           |                       |                        |                   |                          | PREAMP             |                |           | Notes |                  |                          |  |   |
|-----------------|---|---|--|----------------------------------|-----------------------|-----------------------------|--------------------------------------|--------------------------------------|--|-------------------------------------|-----------------------|------------------------|-------------------|--------------------------|--------------------|----------------|-----------|-------|------------------|--------------------------|--|---|
|                 |   |   |  |                                  |                       |                             |                                      |                                      |  | Class of Output Operation           | Dynamic Headroom, dB  | Input Impedance, kOhms | MM Phono S/N, -dB | MM Phono Sensitivity, mV | Moving Coil Input? | Weight, Lbs.   | Price, \$ |       |                  |                          |  |   |
|                 |   |   |  |                                  |                       |                             |                                      |                                      |  |                                     |                       |                        |                   |                          |                    |                |           |       |                  |                          |  |   |
| TECHNICS        | SE-M100<br>SE-A5MK2<br>SE-A100<br>SU-V90D<br>SU-V660<br>SU-V460 | I<br>B<br>B<br>I<br>I<br>I  | 0.005<br>0.002<br>0.007<br>0.003<br>0.007<br>0.007 | No<br>No<br>No<br>No<br>No<br>No | 100<br>90<br>75       |                             | 115<br>150<br>170<br>100<br>90<br>50 | 150<br>240<br>125                    | 20-20<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20 | AA<br>New A<br>AA<br>AA<br>AA<br>AA | 1.4<br>1.5<br>1.0     |                        |                   |                          |                    | 79<br>76<br>76 | 0.25      | 150   | Yes<br>Yes<br>No | 35<br>40 1/2<br>69<br>29 | 1099.00<br>1099.00<br>1899.00<br>1049.00<br>379.00<br>299.00 |   |
| THRESHOLD       | SA 12e  | B/M   | 0.1  | Yes                              | 50                    | 2.1V                        | No                                   | 275                                  | 550  | 0-40                                | Stasis,<br>Class A    | 0                      | †                 |                          |                    |                |           |       |                  | 120                      | 7200.00  | †Balanced, 600 ohms; unbalanced, 50 kilohms. 70 amps continuous per channel, 200 amps peak per channel.   |
|                 | SA 10e  | B/M   | 0.1  | Yes                              | 50                    | 1.8V                        | No                                   | 175                                  | 350  | 0-40                                | Stasis,<br>Class A    | 0                      | †                 |                          |                    |                |           |       |                  | 79                       | 4800.00  | 60 amps continuous per channel, 200 amps peak per channel.  |
|                 | SA 6e   | B/M   | 0.1  | Yes                              | 50                    | 1.6V                        | No                                   | 125                                  | 250  | 0-40                                | Stasis,<br>Class A    | 0                      | †                 |                          |                    |                |           |       |                  | 56                       | 3600.00  | 50 amps continuous per channel, 135 amps peak per channel.  |
|                 | SA 4e   | B   | 0.1  | Yes                              | 50                    | 1.3V                        | No                                   | 100                                  | 200  | 0-40                                | Stasis,<br>Class A    | 0                      | †                 |                          |                    |                |           |       |                  | 97                       | 5900.00  | 35 amps continuous per channel, 120 amps peak per channel.  |
|                 | SA 3.9e   | B   | 0.1  | Yes                              | 50                    | 1V                          | No                                   | 60                                   | 120  | 0-40                                | Stasis,<br>Class A    | 0                      | †                 |                          |                    |                |           |       |                  | 56                       | 3600.00  | 30 amps continuous per channel, 95 amps peak per channel.   |
|                 | SA 1  | B/M   | 0.15   | No                               | 50                    | 1.7V                        | No                                   | 160                                  | 320  | 7-40                                | Stasis,<br>Class A    | 0                      | 75                |                          |                    |                |           |       |                  | 79                       | 4400.00  | 40 amps continuous per channel, 150 amps peak per channel.  |
|                 | SA 2  | B/M   | 0.15   | No                               | 50                    | 1.3V                        | No                                   | 100                                  | 200  | 7-40                                | Stasis,<br>Class A    | 0                      | 75                |                          |                    |                |           |       |                  | 56                       | 3150.00  | 30 amps continuous per channel, 100 amps peak per channel.  |
|                 | SA 3  | B   | 0.15   | No                               | 50                    | 950                         | No                                   | 50                                   | 100  | 7-40                                | Stasis,<br>Class A    | 0                      | 75                |                          |                    |                |           |       |                  | 56                       | 3150.00  | 16 amps continuous per channel, 80 amps peak per channel.   |
|                 | S/1600e   | B/M   | 0.15   | Yes                              | 100                   | 1.8V                        | No                                   | ††                                   | ††   | 0-40                                | Stasis,<br>Class A/AB | 1                      | †                 |                          |                    |                |           |       |                  | 120                      | 7200.00  | ††1 horsepower into 8 ohms, 2 horsepower into 4 ohms. 35 amps continuous per channel, 200 amps peak per channel.  |
|                 | S/550e  | B   | 0.1  | Yes                              | 50                    | 2V                          | No                                   | 250                                  | 425  | 0-40                                | Stasis,<br>Class A/AB | 1                      | †                 |                          |                    |                |           |       |                  | 97                       | 5900.00  | 30 amps continuous per channel, 200 amps peak per channel.  |
|                 | S/450e  | B   | 0.1  | Yes                              | 50                    | 1.8V                        | No                                   | 200                                  | 350  | 0-40                                | Stasis,<br>Class A/AB | 1                      | †                 |                          |                    |                |           |       |                  | 79                       | 4800.00  | 30 amps continuous per channel, 120 amps peak per channel.  |
|                 | S/350e  | B   | 0.1  | Yes                              | 50                    | 1.6V                        | No                                   | 150                                  | 260  | 0-40                                | Stasis,<br>Class A/AB | 1                      | †                 |                          |                    |                |           |       |                  | 56                       | 3600.00  | 25 amps continuous per channel, 100 amps peak per channel.  |
|                 | S/500   | B   | 0.15   | No                               | 50                    | 2V                          | No                                   | 250                                  | 400  | 7-40                                | Stasis,<br>Class A/AB | 1                      | 75                |                          |                    |                |           |       |                  | 79                       | 4200.00  | 12 amps continuous per channel, 100 amps peak per channel.  |
|                 | S/300   | B   | 0.15   | No                               | 50                    | 1.7V                        | No                                   | 150                                  | 200  | 7-40                                | Stasis,<br>Class A/AB | 1                      | 75                |                          |                    |                |           |       |                  | 56                       | 3150.00  | 10 amps continuous per channel, 80 amps peak per channel.   |
| S/200           | B   | 0.15  | No   | 50                               | 1.3V                  | No                          | 100                                  | 150                                  | 7-40   | Stasis,<br>Class A/AB               | 1                     | 75                     |                   |                          |                    |                |           |       | 44               | 2100.00                  | 8 amps continuous per channel, 50 amps peak per channel.     |   |
| TOSHIBA         | XB-1000(RI)   | I   | 0.009  | Yes                              | 150                   |                             | †                                    |                                      | 7-70   |                                     |                       |                        |                   |                          |                    |                |           | 150   | No               | 23.1                     | 999.00   | †50 watts x 4; bridges to 120 watts x 2. Direct digital inputs and outputs; dual D/A converters; video inputs and outputs; see also "Ambience & Surround Sound Processors." |
| VECTOR RESEARCH | VA-1450   | B   | 0.03   | No                               | 150                   | No                          | 60                                   | 100                                  | 20-20  | A8                                  | 2.5                   |                        |                   |                          |                    |                |           |       |                  | 20                       | 349.95   | Bridgeable.   |
| VTL             | Stereo 50/50  | B/T   |  | No                               | 775                   | No                          | 50                                   | 50                                   | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 30                       | 1150.00  |   |
|                 | Stereo 90/90  | B/T   |  | No                               | 775                   | No                          | 90                                   | 90                                   | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 48                       | 1950.00  |   |
|                 | Compact 100   | B/T/M   |  | No                               | 775                   | No                          | 100                                  | 100                                  | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 39                       | 2650.00  |   |
|                 | De Luxe 120   | B/T/M   |  | No                               | 775                   | No                          | 120                                  | 120                                  | 20-30  | A1/A                                |                       | 130                    |                   |                          |                    |                |           |       |                  | 50                       | 3300.00  | Pair  |
|                 | De Luxe 225   | B/T/M   |  | No                               | 775                   | No                          | 225                                  | 225                                  | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 65                       | 4200.00  | Pair  |
|                 | De Luxe 300   | B/T/M   |  | No                               | 775                   | No                          | 300                                  | 300                                  | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 75                       | 4900.00  | Pair  |
|                 | De Luxe 500   | B/T/M   |  | No                               | 775                   | No                          | 500                                  | 500                                  | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 120                      | 8000.00  | Pair  |
|                 | Ichiban Triode 200  | B/T/M   |  | No                               | 775                   | No                          | 200                                  | 200                                  | 20-30  | A                                   |                       | 130                    |                   |                          |                    |                |           |       |                  | 90                       | 7000.00  | Pair  |
|                 | Manley Reference C160   | B/T/M   |  | No                               | 775                   | No                          | 160                                  | 160                                  | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 43                       | 3300.00  | Pair  |
|                 | Manley Reference 150  | B/T/M   |  | No                               | 775                   | No                          | 150                                  | 150                                  | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 55                       | 4800.00  | Pair  |
|                 | Manley Reference 350  | B/T/M   |  | No                               | 775                   | No                          | 350                                  | 350                                  | 20-30  | A1                                  |                       | 130                    |                   |                          |                    |                |           |       |                  | 80                       | 6600.00  | Pair  |
|                 | (Continued)   |   |  |                                  |                       |                             |                                      |                                      |  |                                     |                       |                        |                   |                          |                    |                |           |       |                  |                          |  |   |

## The Monitor Series

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# Audiophile-quality background music from a remote control multi-CD player?

You probably wouldn't expect it. Until you've heard the sound that the NAD Monitor Series 5170 Multi-CD Player can deliver.

With the 5170 you can have it both ways. Audiophile-quality single-play at the drop of a disc into the single-play drawer. Or audiophile-quality multi-play (up to seven discs, or seven hours) with the pre-loadable magazine.

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Such innovative technology, extraordinary sound quality, and ease of use are abundantly evident in this fine player. The ultimate judgement, however, should be made by listening. We invite you to bring a few of your discs to one of our carefully selected dealers. You may be surprised at what you hear.

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Please send 5170 Multi-CD Player information and dealer locations to:

Name

Address

City

State  Zip

A10



**For the music, pure and simple.**



# AMPLIFIERS

| MANUFACTURER       | Model<br>(R) = Remote Included,<br>(RO) = Remote Optional  | Type: Integrated = I, Stereo = S,<br>B-Type = T, Hybrid = H, Mono = M | Rated THD, %  | Balanced Inputs?   | Rated Slew Rate, V/μs  | High-Level Sensitivity, mV   | Does Unit Invert Polarity?   | Cont. Avg. Watts Channel into 8 Ohms   | Cont. Avg. Watts Channel into 4 Ohms  | Rated Full-Power Bandwidth,<br>Hz to kHz                                 | POWER AMP  |  |  |  | PREAMP                   |                    |  |   | Price, \$   | Notes   |
|--------------------|--|---|---|--|--|--|--|--|---|--|--|--|--|--|--------------------------|--------------------|--|---|---|---|
|                    |  |   |   |  |  |  |  |  |   |  | Class of Output Operation  | Dynamic Headroom, dB   | Input Impedance, kOhms                 | MM Phono S.N. - dB, "A" - Wid. re 5 mV | MM Phono Sensitivity, mV | Moving Coil Input? | Weight, Lbs.                           |   |   |   |
|                    |  |   |   |  |  |  |  |  |   |  |  |  |  |  |                          |                    |  |   |   |   |
| VTL<br>(Continued) | Manley Reference 500<br>Manley Reference Ichiban Triode 200<br>Manley Reference 1000   | B/T/M<br>B/T/M<br>B/T/M   | No<br>No<br>No  |  | 775<br>775<br>775  | No<br>No<br>No   | 500<br>200<br>↑  | 500<br>200<br>↑  | 20-30<br>20-30<br>20-30   | A1<br>A<br>A1  |  | 130<br>130<br>130  |  |  |                          |                    | 135<br>95<br>155                       | 9600.00 Pair<br>8400.00 Pair<br>14,000.00 Pair                                      | †1000 watts.  |   |
| WINGATE AUDIO      | 2000A<br>4000A<br>6000AX   | B<br>B<br>B   | Opt.<br>Opt.<br>Opt.  |  | 100<br>100<br>100  | 120<br>120<br>120  | No<br>No<br>No   | 100<br>200<br>300  | 200<br>400<br>300   | 0.1-250<br>0.1-250<br>0.1-250  | A<br>A<br>A  |  | 25<br>25<br>25                         |  |                          |                    |  | 67<br>70<br>70  | 3900.00<br>4600.00<br>4600.00   | Dual mono; bridgeable; no negative feedback.<br>As above.<br>Operates into 16 ohms; high voltage for ES speakers.   |
| YAMAHA             | MX-2000<br>MX-1000<br>MX-800<br>MX-600<br>AX-430<br>MX-10000<br>YST A90M(RI)<br><br>AX-900U<br>AX-700U<br>AX-630<br>MX-55<br>MX-35 | B<br>B<br>B<br>B<br>I<br>B<br>I<br><br>I<br>I<br>I<br>B<br>B          | 0.003<br>0.003<br>0.003<br>0.003<br>0.015<br>.0005<br>0.09<br><br>0.005<br>0.005<br>0.01<br>0.002<br>0.05 | No<br>No<br>No<br>No<br><br><br><br><br>No<br>No<br>No<br>No<br>No | 1.2V<br>1.6V<br>1.3V<br>1.1V<br>150<br>1.5V<br>150<br><br>150<br>150<br>150<br>1V<br>940 | No<br>No<br>No<br>No<br><br><br><br><br>No<br>No<br>No<br>No<br>No | 130<br>260<br>170<br>135<br>55<br>250<br>↑<br><br>130<br>110<br>85<br>70<br>40 | 180<br>330<br>230<br>190<br>10-60<br>10-60<br>10-60<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20 | 10-100<br>10-60<br>10-60<br>10-60<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20 | A<br>A<br>A<br>A<br>A<br>AB<br>A<br>AB<br><br>AB<br>AB<br>AB<br>AB<br>AB | 1.4<br>2.3<br>2.0<br>2.1<br>2.7<br>1.5<br>1.3<br><br>1.4<br>1.4<br>2.8<br>1.8<br>1.5 | 20<br>60<br>60<br>60<br>30<br>25<br>47<br><br>47<br>47<br>47<br>20<br>20 | 75<br><br><br><br>92<br>80<br>92<br>92 | 2.5<br><br><br><br>2.5<br>2.5<br>2.5   |                          |                    | Yes<br><br><br>No<br>Yes<br>Yes<br>Yes | 61½<br>45½<br>31½<br>28½<br>13½<br>94½<br>14¾<br><br>37½<br>26½<br>17½<br>20½<br>11 | 1899.00<br>1199.00<br>849.00<br>529.00<br>299.00<br>7000.00<br>700.00<br><br>749.00<br>599.00<br>449.00<br>599.00<br>299.00 | †45 watts into 6 ohms<br>Active servo technology; digital.<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br>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# Hafler SE

SE, a new generation of sonic excellence and inherent value from Hafler. This new series of affordable components will be available this fall. For the nearest authorized dealer call 1-800-366-1619.

**Hafler** "The Affordable High-End"



# DENON

PCM AUDIO TECHNOLOGY / COMPACT DISC

## WHAT MAKES ONE AUDIO BRAND SOUND BETTER.

**CD PLAYERS** have always been susceptible to errors in converting digital data to analog audio. In fact, academic researchers recently declared that error in converting the Most Significant Bit is a primary cause of audible problems. Every Denon Compact Disc Player since 1983 has corrected this problem with the Super Linear Converter.

Now, with the new "Delta" conversion circuit, Denon's DCD-3520 and DCD-1520 represent the closest approach yet to true 16-bit linearity. Denon's 20-bit 8x oversampling digital filter joined to a pair of true 20-bit Super Linear Converters quite simply elevate digital playback to a new level of musicality.

DCD-1520



But then, Denon built the world's first professional digital audio recorder back in 1972. And we've recorded digital master tapes of unsurpassed musical accuracy.

It's simply easier to make digital audio sound more like music when you know what music sounds like.

# DENON

DESIGN INTEGRITY

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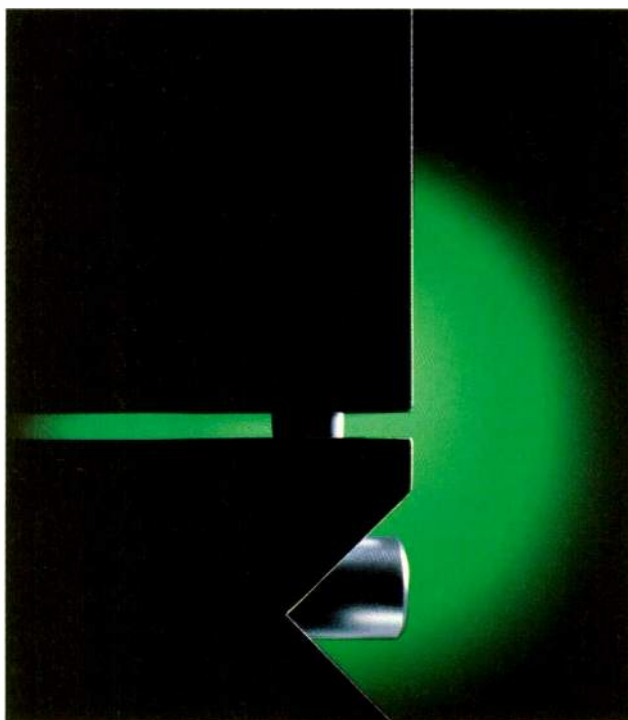
Denon America Inc. 222 New Road, Parsippany, NJ 07054 (201) 575-7810



# PREAMPLIFIERS

| MANUFACTURER            | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional                | Type: Tube = T, Hybrid = H, Mono = M, Digital = D;<br>Moving Coil Stage Only = MC, Phono Stage Only = P | Frequency Response,<br>Hz to kHz, ±dB  | Maximum Output, V          | THD, %  | Balanced Inputs = 1, Balanced Outputs = 0 | High-Level Sensitivity, mV      | Number of Tape & Processor Loops | Does Unit Invert Polarity?       | MM Phono Sensitivity, mV,<br>for 0.5 V Output at 1kHz | MM Phono Overload, mV           | MM Phono Input Capacitance, pF  | MC Phono S/N, —dB, "A" Wtd. re: 5 mV | Moving Coil Input?            | Price, \$   | Notes  |  |   |
|-------------------------|---|---|--|----------------------------|---|---|---------------------------------|----------------------------------|----------------------------------|---|---------------------------------|---------------------------------|--------------------------------------|-------------------------------|---|--|--|---|
|                         |   |   |  |                            |   |   |                                 |                                  |                                  |   |                                 |                                 |                                      |                               |   |  |  |   |
| ACCUPHASE               | C-280L<br>C-270<br>C-200V<br>C-202<br>C-17                                | MC  | 1-700 +0,-3<br>1-500 +0,-3<br>1-500 +0,-3<br>1-500 +0,-3<br>20-20 +0,-0.2              | 10<br>10<br>8<br>10<br>10  | 0.005<br>0.005<br>0.005<br>0.005<br>0.005     | I/O<br>I/O<br>I/O<br>I/O<br>I/O           | 126<br>126<br>126<br>200<br>200 | 2<br>2<br>3<br>2<br>2            | 0<br>0<br>4<br>0<br>0            | No<br>No<br>No<br>No<br>No                            | 0.5<br>0.5<br>1<br>1<br>1       | 300<br>300<br>300<br>300<br>300 | 86<br>85<br>85<br>83<br>76           | Yes<br>No<br>Yes<br>No<br>Yes | 11,750.<br>8250.00<br>6000.00<br>4100.00<br>3400.00 |  |  |   |
| ADCOM                   | GTP-400<br>GTP-500II<br>(RI)<br>GFP-555II<br>GFP-565                      |   | 10-40 ±0.5<br>10-40 ±0.4<br>10-50 ±0.3<br>10-50 ±0.2                                   | 8<br>8<br>10<br>10         | 0.01<br>0.01<br>0.005<br>0.003                |   | 80<br>80<br>52<br>52            | 2<br>2<br>3<br>3                 | 2<br>2<br>2<br>2                 | Yes<br>No<br>No<br>No                                 | 3.3<br>3.3<br>0.55<br>0.55      | 118<br>120<br>120<br>120        | 100<br>100<br>100<br>100             | 80<br>82<br>85<br>90          | No<br>No<br>No<br>No                                | 349.95<br>599.95<br>499.95<br>699.95                         | Tuner/preamp (see also "Tuners").<br>As above; optional remote sensors.  |   |
| A/D/S/                  | CC4(RI)   |   | 20-20 +0,-0.5  |                            | 0.07  | I   | 90                              | 2                                | 2                                | No  | 1.3                             | 150                             | 220                                  | 70                            | 65  | Yes  | 850.00   | Tuner/preamp.   |
| ANALOG RESEARCH         | Terzetto<br>Line Stage<br>Terzetto<br>Phono Stage                         | P   | 20-20 ±0.05  | 10                         | 0.01  | 0<br>†                                    |                                 | 1                                | 0                                | Sel.  | Var.                            | Var.                            | Var.                                 | 85                            | 73  | Yes  | 1200.00<br>600.00  | Unity gain line stage; external<br>power supply required.<br>†Optional balanced inputs. Line-<br>level output; external power supply<br>required. |
| ARAGON                  | 24K<br>24K sp   |   |  |                            | 0.06<br>0.06                                  |   |                                 | 2<br>2                           | 0<br>0                           | No<br>No  |                                 |                                 |                                      | 90<br>70                      | Yes<br>No   | 1250.00<br>995.00  | External power supply; selectable<br>MC impedance.<br>External power supply.   |   |
| ARISTON                 | Encore<br>Preamplifier<br>(RI)  |   | 20-20  | 7                          | 0.03  |   | 200                             | 2                                | 0                                | No  | 2                               |                                 | 200                                  | 75                            | 70  | Yes  | 599.00   | Separate headphone amp.   |
| ATMA-SPHERE             | MP-1  | T   | 2-80 ±0.5  | 10                         |   | I/O                                       | 500                             | 1                                | 0                                | Sel.  | 1.25                            | 300                             | 20                                   | 74                            | 70  | Yes  | 4600.00  | External power supply.  |
| AUDIBLE ILLUSIONS       | Modulus 2D<br>Modulus 3<br>Saturn   | T<br>T<br>H   | 10-100 ±1<br>10-100 ±1<br>10-100 ±1  | 80<br>80<br>100            | 0.02<br>0.02<br>0.02                          |   | 50<br>50<br>50                  | 1<br>2<br>2                      |                                  | Yes<br>Yes<br>Sel.                                    | 1.2V<br>1.2V<br>500             | 40<br>40<br>50                  | 75<br>75<br>90                       | 70<br>85                      | Yes<br>Yes<br>Yes                                   | 895.00<br>1495.00<br>3500.00                                 | Dual mono; external power supply.<br>As above.   |   |
| AUDIDACCESS             | PX-4/KP-1<br>(RI)<br>PX-4FR/IRT<br>(RI)                                   |   | 20-20 ±0.25<br>20-20 ±0.25   | 8<br>8                     | 0.01<br>0.01                                  | Opt.<br>Opt.                              |                                 | 1<br>1                           | 0<br>0                           | No<br>No  |                                 |                                 |                                      |                               |   | †<br>†   | Multi-zone, multi-source, multi-room<br>switching system; includes keypad<br>remote. †\$750.00 per zone.<br>As above but includes infrared<br>remote. †\$900.00 per zone.                                      |   |
| AUDIO DESIGN ASSOCIATES | DSP-8(RO)<br>ADP-8<br>DCA-40P(RO)<br>CPC-8(RO)<br>DSP-48(RO)<br>CR8-P(RO) |   | 20-20 ±0.25<br>20-20 ±0.25<br>20-20 ±0.25<br>20-20 ±0.25<br>20-20 ±0.25<br>20-20 ±0.25 | 5<br>5<br>7<br>5<br>5<br>5 | 0.007<br>0.05<br>0.05<br>0.05<br>0.05<br>0.05 |   | 4<br>1<br>0<br>3<br>3<br>2      | 3<br>3<br>3<br>3<br>3<br>2       | No<br>No<br>No<br>No<br>No<br>No |   |                                 |                                 |                                      |                               |   | 1395.00<br>995.00<br>800.00<br>11,492.<br>2495.00<br>1150.00 | Multi-room preamp.<br>For multi-room System 56.<br>8 x 8 multi-room, multi-source<br>switcher.<br>Multi-room preamp.<br>For multi-room System Omega;<br>without front-panel controls,<br>Model CR-P, \$950.00. |   |
| AUDIO EXKLUSIV          | P 2   |   |  |                            | 0.005   |   |                                 |                                  | 0                                |   | 1.5                             |                                 |                                      | 96                            | 86  | Yes  | 2695.00  | External power supply; BNC<br>connectors.   |
| AUDIOLAB                | 8000C   |   | 20-20 ±0.5   | 7.8                        | 0.01  |   | 100                             | 2                                | 2                                | No  | 2.0                             | 175                             | Adj.                                 | 79                            | 75  | Yes  | 595.00   | Class-A operation.  |
| AUDIO RESEARCH          | SP9MKII<br>SP14<br>SP15   | H<br>H<br>H   | 1-200 +0,-3<br>1-200 +0,-3<br>1-200 +0,-3  | 50<br>50<br>80             | 0.005<br>0.005<br>0.001                       |   | 50<br>50<br>18                  | 2<br>2<br>0                      | 0<br>0<br>0                      | No<br>No<br>Sel.                                      | 0.25<br>0.25<br>0.088           | 200<br>200<br>350               | 100<br>100<br>150                    | 92<br>72<br>90                | 72<br>70  | Yes<br>Yes<br>Yes  | 1795.00<br>2995.00<br>5995.00  | Auto and manual muting.<br>Bypass switch.<br>External power supply.   |
| AUDIOSOURCE             | Pre One   |   | 8-100 +0,-3  | 5                          | 0.005   |   | 120                             | 2                                | 3                                | No  | 2.2                             | 125                             | 250                                  | 86                            | 71  | Yes  | 249.95   | Dual output; bass EQ; tape-to-tape<br>dub.  |
| AUDIRE                  | Andante<br>Diffet 3<br>Legato   |   | 5-100 +0,-0.2<br>5-100<br>+0,-0.25<br>5-100<br>+0,-0.25                                | 12<br>15<br>10             | 0.005<br>0.005<br>0.005                       |   | 100<br>100<br>100               | 2<br>2<br>2                      | 2<br>0<br>0                      | †<br>No<br>No   | 1.00<br>1.00<br>1.00            | 175<br>250<br>150               | 220<br>100<br>180                    | 90<br>86<br>75                | 80 =<br>†<br>No                                     | 1750.00<br>855.00<br>440.00                                  | †Inverts polarity only in MC stage.<br>Dual mono.<br>†Optional, \$135.00.  |   |
| A.V.A.                  | FET 3<br>FET 3 Plus<br>Super PAS 3<br>Trans-<br>cendence<br>FET Valve     | T<br>H  | 15-30 ±0.2<br>12-40 ±0.2<br>20-25 ±0.2<br>10-45 ±0.2<br>10-40 ±0.1                     | 10<br>12<br>8<br>12<br>15  | 0.005<br>0.004<br>0.02<br>0.002<br>0.001      |   | 50<br>50<br>50<br>50<br>50      | 1<br>3<br>1<br>3<br>3            | 2<br>4<br>0<br>4<br>4            | No<br>No<br>No<br>No<br>No                            | 0.7<br>0.7<br>0.6<br>0.7<br>0.7 | 150<br>200<br>200<br>350<br>400 | 10<br>10<br>20<br>10<br>10           | 75<br>78<br>72<br>80<br>82    | No<br>No<br>No<br>No<br>No                          | 340.00<br>595.00<br>595.00<br>795.00<br>1195.00              |  |   |
| BEDINI AMPLIFIERS       | BC-800<br>BC-866  |   | 1-110 +0,-3<br>1-110 +0,-3   |                            | 0.15<br>0.15                                  | No<br>No                                  |                                 | 2<br>1                           | 2<br>2                           | No<br>No  |                                 | Sel.<br>100                     |                                      | No<br>No                      | 1750.00<br>800.00                                   |  |  |   |
| BELLES RESEARCH         | 55  |   | 20-20 ±0.1   | 9.0                        | 0.05  |   | 53                              | 1                                | 0                                | No  | 1                               | 100                             | 100                                  | 86                            | 80  | Yes  | 649.00   | External power supply.  |
| DAVID BERNING CO.       | TF-12(RI)   | H   | 4-50 ±1  | 5                          | 0.05  |   | 32                              | 1                                | 0                                | No  | 0.38                            | 200                             |                                      | 74                            | 54  | Yes  | 2950.00  |   |
| B & K                   | Pro-5<br>PRO-10<br>PRO-10MC<br>MC-101                                     |   | 1-100 ±1<br>1-100 ±1<br>1-100 ±1<br>1-50 ±1  | 7<br>7<br>7<br>9           | 0.03<br>0.01<br>0.01<br>0.02                  | No<br>No<br>No<br>Opt.                    | 53<br>45<br>45<br>45            | 2<br>1<br>1<br>2                 | 2<br>0<br>0<br>2                 | No<br>No<br>No<br>No                                  | 0.56<br>0.5<br>0.5<br>0.8       | 100<br>100<br>100<br>150        | 75<br>75<br>75<br>Var.               | 84<br>86<br>86<br>82          | No<br>No<br>Yes<br>Yes                              | 398.00<br>598.00<br>648.00<br>898.00                         | Direct bypass.<br>As above.<br>As above.<br>As above; external power supply.   |   |

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*Ken Kessler HiFi News & Record Reviews, March 1989*

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*Alvin Gold HiFi Answers, December 1988*

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*Stereophile* Vol. 12 No. 3  
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# PREAMPLIFIERS

| MANUFACTURER                | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional | Type: Tape = T, Hybrid = H, Mono = M, Digital = D,<br>Moving Coil Stage Only = MC, Phono Stage Only = P | Frequency Response,<br>Hz to kHz, $\pm$ dB | Maximum Output, V | THD, %         | PHONO STAGE                               |                            |                                  |   |                          |                       |                                |  |                    |          | Price, \$             | Notes                                  |  |
|-----------------------------|--|---|--|-------------------|----------------|---|----------------------------|----------------------------------|---|--------------------------|-----------------------|--------------------------------|--|--------------------|----------|-----------------------|--|--|
|                             |  |   |  |                   |                | Balanced Inputs = 1, Balanced Outputs = 0 | High-Level Sensitivity, mV | Number of Tape & Processor Loops | Does Unit Invert Polarity?<br>for 0.5 V output at 1 kHz | MM Phono Sensitivity, mV | MM Phono Overload, mV | MM Phono Input Capacitance, pF | MC Phono S.N., $\pm$ dB, "A" Wtd. re. 5 mV | Moving Coil Input? |          |                       |  |  |
| BOULDER AMPLIFIERS          | Ultimate   |   | 20-20<br>+0, -0.05                         | 12                | .0025          | 0   | 67                         | 2                                | 0   | Sel.                     | 2.5                   | 530                            | 85   | 85                 | 74       | Yes                   | 4795.00                                | External power supply; separate phono unit has three-position low-cut selector.  |
|                             | Ultimate High Level Complete                               |   | 20-20<br>+0, -0.05                         | 12                | .0025          | 0   | 67                         | 2                                | 0   | Sel.                     |                       |                                |  |                    |          |                       | 3095.00                                | External power supply; line-level inputs only.   |
|                             | Complete High Level Line                                   |   | 20-20<br>+0, -0.05                         | 12                | .0025          | 0   | 53                         | 2                                | 0   | No                       | 2.5                   | 530                            | 85   | 85                 |          | Opt.                  | 2895.00                                | Inputs as above.   |
|                             |  |   | 20-20<br>+0, -0.05                         | 12                | .0025          | 0   | 53                         | 0                                | 0   | No                       |                       |                                |  |                    |          |                       | 1395.00                                | Single line-level input.   |
| BRITISH FIDELITY            | MVX  |   | 10-200<br>+0, -0.5                         | 7                 | 0.5            |   | 220                        | 0                                | 0   | No                       |                       |                                |  |                    | 75       | Yes                   |  | MOS-FET.   |
|                             | Preamp 3   |   | 10-100<br>+0, -0.5                         | 5.5               | 0.5            |   | 220                        | 1                                | 0   | No                       | 3.5                   | 180                            | 150  | 75                 | 65       | Yes                   |  | As above.  |
| BRYSTON                     | .48  |   | 20-20 $\pm$ +0.1                           | 14                | 0.005          | †   |                            | 1                                | 0   | No                       |                       |                                |  |                    |          |                       | 595.00                                 | †With optional balanced outputs, \$100.00 additional.  |
|                             | .4/28  |   | 20-20 $\pm$ 0.1                            | 14                | 0.005          | I/O                                       |                            | 1                                | 0   | No                       |                       |                                |  |                    |          |                       | 925.00                                 |  |
|                             | .58  |   | 20-20 $\pm$ 0.1                            | 14                | 0.005          | †   |                            | 1                                | 0   | ††                       |                       |                                | Sel.                                       | 80                 |          | No                    | 695.00                                 | ††Inverts polarity in MM phono stage only.   |
|                             | 118<br>128<br>TF1<br>.68                                   | MC<br>P   | 20-20 $\pm$ 0.1<br>20-20 $\pm$ 0.1         | 14<br>14          | 0.005<br>0.005 | †<br>†                                    |                            | 2<br>2                           | 0<br>0  | ††<br>††                 |                       |                                |  | 80<br>80           |          | No<br>No<br>Yes<br>No | 1250.00<br>1695.00<br>500.00<br>595.00 | Without phono stage, \$1150.00.<br>MM phono only, RIAA.  |
| CAE                         | MP-567   | T   | 15-160 $\pm$ 0.1                           | 100               | 0.035          |   | 150                        | 1                                | 0   | Yes                      | 5                     | 1.1V                           | 60   | 73                 |          |                       | 800.00                                 |  |
| CARVER                      | C-19   | H   | 1-60 +0, -0.3                              | 7                 | 0.07           |   |                            | 4                                | 3   | Yes                      | 1.5                   | 100                            | Sel.                                       | 86                 | 82       | Yes                   | 1195.00                                | Spectral tilt EQ; tone controls have variable turnover.  |
|                             | C-16   |   | 1-60 +0, -0.3                              | 7                 | 0.01           |   |                            | 4                                | 3   | No                       | 1.5                   | 135                            | Sel.                                       | 100                | 89       | Yes                   | 729.95                                 | As above; includes Sonic Hologram Generator.   |
|                             | C-11   |   | 1-60 +0, -0.3                              | 7                 | 0.05           |   |                            | 3                                | 2   | No                       | 1.5                   | 100                            | Sel.                                       | 100                | 86       | Yes                   | 579.95                                 | Tone controls and Generator as above.  |
|                             | CT-17(RI)  |   | 1-60 +0, -0.3                              | 7                 | 0.01           |   |                            | 4                                | 3   | No                       | 1.5                   | 100                            | 150  | 100                | 86       | Yes                   | 799.95                                 | Tuner/preamp (see also "Tuners"); five-channel surround sound; Dolby Pro Logic; hall and stadium effects; Sonic Hologram Generator.                                    |
| CARY AUDIO DESIGN           | PD-1   | T   |  |                   |                |   |                            | 0                                | 0   | No                       |                       |                                |  |                    |          |                       | 895.00                                 | Passive line stage.  |
|                             | PD-2   | T   |  |                   |                |   |                            | 0                                | 0   | No                       |                       |                                |  |                    |          |                       | 1595.00                                |  |
|                             | PD-3(RI)   | T   |  |                   |                |   |                            | 0                                | 0   | No                       |                       |                                |  |                    |          |                       | 2995.00                                |  |
| CASCADE AUDIO SYSTEMS       | SNP-2B   | MC  | 2-120 $\pm$ 0.6                            |                   | 0.007          |   |                            |                                  |   | No                       |                       |                                |  |                    |          |                       | 375.00                                 | 28-dB gain.  |
|                             | RPP-3A   | H/P   | 10-20 $\pm$ 1                              |                   | 0.075          |   |                            |                                  |   | No                       | 1.0                   | 275                            | 82   | 74                 | 81<br>73 | Yes<br>Yes            | 399.00                                 | Requires CPS-1R power supply, \$199.00.  |
|                             | CLP-4A   | T   | 10-20 $\pm$ 1                              | 24                | 0.07           |   | 160                        | 2                                | 0   | No                       |                       |                                |  |                    |          |                       | 449.00                                 | Passive or active line stage; 20-dB gain; requires power supply above for gain made.   |
| CELLO                       | Encore<br>Audio Suite                                      |   |  |                   |                | I/O                                       |                            | 2                                | 0   |                          |                       |                                |  |                    |          | Yes                   | 8000.00                                | External power supply; without phono stage, \$7500.00. Modular system (mainframe with external power supply and choice of input and output modules); specs on request. |
| CLASSÉ AUDIO                | DR-5   |   | 20-20 $\pm$ 0.15                           | 8                 | 0.01           | 0   | 155                        | 1                                | 0   | Sel.                     | 1.15                  | 200                            | 100  | 80                 | 80       | Yes                   | 1995.00                                | External power supply.   |
|                             | DR-6   |   | 20-20 $\pm$ 0.15                           | 8                 | 0.01           | 0   | 155                        | 1                                | 0   | Sel.                     | 1.15                  | 200                            | 100  | 80                 | 80       | Yes                   | 2995.00                                | As above.  |
|                             | DR-7   |   | 5-20 $\pm$ 0.15                            | 8                 | 0.01           | 0   | 155                        | 2                                | 0   | No                       | 1.15                  | 200                            | 100  | 80                 | 80       | Yes                   | 4995.00                                |  |
| CLEARAUDIO                  | Harmony Phono Pre-Amp                                      | MC  | 0-100 +0, -0.3                             | 8                 | 0.01           | I   |                            |                                  |   | No                       |                       |                                |  |                    | 80       | Yes                   | 2850.00                                | MC phono stage mounts directly on headshell, weighs 7 grams; separate gain-stage box has volume control.   |
| CONRAD-JOHNSON              | Premier Seven  | T   | 2-100                                      | 20                | 0.25           |   |                            | 2                                |   | Yes                      |                       | 150                            |  |                    |          | Yes                   | 7850.00                                | Dual mono.   |
|                             | PV9  | T   | 2-100                                      | 20                | 0.25           |   |                            | 2                                |   | Yes                      |                       | 200                            |  |                    |          | Yes                   | 2950.00                                |  |
|                             | PV8  | T   | 2-100                                      | 20                | 0.25           |   |                            | 2                                |   | Yes                      |                       | 200                            |  |                    |          | Yes                   | 1685.00                                |  |
|                             | PV10   | T   | 2-100                                      | 25                | 0.25           |   |                            | 1                                |   | Yes                      |                       | 125                            |  |                    |          | Yes                   | 995.00                                 |  |
|                             | DF-1(RI)   |   | 5-100                                      | 10                | 0.1            |   |                            | 1                                |   |                          |                       |                                |  |                    |          |                       | 1595.00                                | CD player/preamp (see also "CD Players").  |
| CONVERGENT AUDIO TECHNOLOGY | SL1 Reference  | T   | 0.1-600 +0, -0.3                           | 50                | .0005          |   | 25                         | 1                                |   | No                       | 0.12                  | 250                            | 180  | 90                 | 70       | Yes                   | 4500.00                                |  |
| COUNTERPOINT                | SA-2   | T/MC  | 0.5-350 $\pm$ 0.1                          | 150               | 0.1            |   |                            |                                  |   | Yes                      |                       |                                |  |                    |          |                       | 1145.00                                | External power supply.   |
|                             | SA-1000  | H   | 2-30 $\pm$ 0.1                             | 70                | 0.17           |   | 24                         | 1                                |   | Yes                      | 0.5                   | 250                            |  |                    |          | Yes                   | 835.00                                 | Auto mute.   |
|                             | SA-3000  | H   | 2-300 $\pm$ 0.1                            | 80                | 0.01           |   | 24                         | 2                                |   | Yes                      | 0.5                   | 350                            |  |                    |          | Yes                   | 1895.00                                | External transformer.  |
|                             | SA-5000  | H   | 1-500 $\pm$ 0.1                            | 100               | 0.01           |   | 24                         | 2                                |   | Yes                      | 0.5                   | 500                            |  |                    |          | Yes                   | 2995.00                                | External tube power supply.  |
|                             | SA-9   | T/P   | 1-180 $\pm$ 0.1                            | 100               | 0.1            |   |                            |                                  |   | No                       |                       | 500                            | Adj.                                       |                    |          | Yes                   | 4395.00                                | External power supply.   |
|                             | SA-11(RI)  | T   | 0.8-230 $\pm$ 0.1                          | 42                | 0.007          |   | 90                         | 2                                |   | Adj.                     |                       |                                |  |                    |          | Yes                   | 5795.00                                | Motor-driven potentiometers.   |
| CROWN INTERNATIONAL         | PSL-2  |   | 10-50 $\pm$ 0.25                           | 2.5               | 0.009          | No  | 250                        | 2                                | 2   | No                       |                       |                                | 50   | 81                 |          |                       | 695.00                                 | Overload indicators; switchable EQ; rumble filter.   |
| DB SYSTEMS                  | DB-1B/2A   |   | 20-20 $\pm$ 0.04                           | 9                 | .0008          |   | 120                        | 1                                | 0   | Var.                     | 0.9                   | 150                            | 100  | 77                 |          | No                    | 700.00                                 | External power supply.   |
|                             | DBR-15B/2A   |   | 20-20 $\pm$ 0.04                           | 10                | .0008          |   | 120                        | 1                                | 6   | Var.                     | 0.9                   | 150                            | 100  | 77                 |          | No                    | 1135.00                                | Without oak cabinet, \$985.00.   |
|                             | DB-1B-HL/2A  |   | 10-50 $\pm$ 0.1                            | 9                 | .0008          |   | 120                        | 1                                | 0   | Var.                     |                       |                                |  |                    |          | No                    | 580.00                                 |  |
|                             | DB-4B  | MC  | 10-100 $\pm$ 0.1                           | 2                 | .0008          |   |                            |                                  |   | No                       |                       |                                |  |                    | 80       | Yes                   | 205.00                                 | Adjustable gain.   |



# PREAMPLIFIERS

| MANUFACTURER                 | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional | Type: Tube = T, Hybrid = H, Mono = M, Digital = D;<br>Moving Coil Stage Only = MC, Phono Stage Only = P | Frequency Response,<br>Hz to kHz, $\pm$ dB | Maximum Output, V | THD, % | Balanced Inputs = I, Balanced Outputs = O | High-Level Sensitivity, mV | Number of Tape & Processor Loops | Does Unit Invert Polarity? | MM Phono Sensitivity, mV,<br>for 0.5 V Output at 1 kHz | MM Phono Overload, mV | MM Phono S/N, -dB, "A" Wtd. re. 5 mV | MC Phono S/N, -dB, "A" Wtd. re. 0.5 mV | Moving Coil Input? | Price, \$ | Notes   |                   |  |
|------------------------------|--|---|--|-------------------|--------|---|----------------------------|----------------------------------|----------------------------|--|-----------------------|--------------------------------------|--|--------------------|-----------|---------|-------------------|--|
|                              |  |   |  |                   |        |   |                            |                                  |                            |  |                       |                                      |  |                    |           |         | PHONO STAGE       |  |
| DBX                          | CX-3MkII(RI)   |   | 10-50                                      | 10                | .0008  | I   | 150                        | 5                                | 3                          | No   | 2.5                   | 180                                  | 33                                     | 78                 | 70        | Yes     | 799.00            | Dolby surround sound.  |
| DENNESEN                     | Sirius II JC80   | M   |  | 0.01              | †      |   | 125                        | 2                                | 0                          | No   | 2                     | 200                                  |  | 80                 |           | No      | 700.00            | †Optional balanced outputs.  |
|                              | JC90   |   | 0.005                                      | 100               |        | 2   | 0                          | No                               | 2                          | 500  | 100                   | Yes                                  | 3000.00                                |                    |           |         |                   |  |
| DENON                        | DAP-5500   | O   | 1-300 +0.2, -3                             | 15                | 0.002  | I/O                                       | 150                        | 3                                | 0                          |  |                       |                                      |  |                    |           |         | 1500.00           | One optical and two coaxial digital inputs; DAT monitor loop; four D/A converters. One optical and one coaxial digital input; two video inputs and one video output; monitor loop and converters as above. Two video inputs and one video output; mono, full-range, and subwoofer outputs. |
|                              | DAP-2500 (RI)  | O   | 1-300 +0.2, -3                             | 15                | 0.002  | O   | 150                        | 3                                | 2                          | 2.5  | 160                   | 96                                   | 79                                     | Yes                | 1000.00   |         |                   |  |
|                              | PRA-1500 (RI)  |   | 1-300 +0.2, -3                             | 10                | 0.003  | O   | 150                        | 2                                | 2                          | 2.5  | 160                   | 96                                   | 79                                     | Yes                | 500.00    |         |                   |  |
| DISTECH                      | LS III   |   | 0-100                                      | 8                 | 0.001  |   |                            | 1                                | 0                          | No   |                       |                                      |  |                    |           |         | 1800.00           | Line level only. Dual mono.  |
|                              | LS IV  |   | 0-100                                      | 10                | .0005  |   |                            | 1                                | 0                          | No   |                       |                                      |  |                    |           |         | 3600.00           |  |
| DOLAN                        | PM-1   |   | 1-500                                      | 12                | 0.02   | No  | 100                        | 2                                | 0                          | No   | 1                     | 180                                  | Var.                                   | †                  | ††        | Yes     | 2395.00           | †80 dB, unweighted. ††72 dB, unweighted.   |
| EIDOLON RESEARCH             | Julia  | T   | 0.1-200 +0.1, -1.5                         | 85                | 0.01   | No  | Sel.                       | 2                                | 0                          | Var.   | 1.45                  | 500                                  | Adj.                                   | 79                 | 65        | Yes     | 4200.00           | Dual mono.   |
|                              | Mentat   | T   | 0.5-150 +0.1, -1.5                         | 85                | 0.01   | No  | Sel.                       | 2                                | 0                          | Var.   | 1.45                  | 500                                  | Adj.                                   | 78                 | 65        | Yes     | 2400.00           | External power supply.   |
|                              | Salesia  | T   | 0.5-150 +0.1, -1.5                         | 70                | 0.01   | No  | Sel.                       | 2                                | 0                          | Yes  | 1.45                  | 500                                  | Adj.                                   | 78                 |           | No      | 1200.00           | Passive and active RIAA.   |
| ELECTRO-COMPANET             | EC1  |   |  | 15                | .0004  |   | 100                        | 2                                | 0                          | †  | 1.5                   | 200                                  | Adj.                                   |                    | 84        | Yes     | 2095.00           | †Inverts polarity only in MC phono stage.  |
|                              | EC1a   |   |  | 15                | .0004  |   | 100                        | 2                                | 0                          | No   | 1.5                   | 200                                  | Adj.                                   |                    | 84        | Yes     | 1795.00           |  |
|                              | MC2 LD1  | MC  |  |                   | .0015  |   | 100                        | 4                                | 0                          |  |                       |                                      |  |                    |           | Yes     | 450.00            |  |
| ELECTRONIC VISIONARY SYSTEMS | MOD-1  | T   | 10-200 +0.1, -1                            | 70                | 0.1    | No  | 50                         | 1                                | 0                          | Yes  | 0.5                   | 1V                                   | 10                                     | 75                 |           |         | 750.00            | Passive high-level stage. As above. Passive line level only; stereo Penny and Giles pot. As above but mono pots. As above; five inputs.  |
|                              | MOD-2  | T/P   | 20-20 $\pm$ 0.5                            | 30                | 0.05   | No  |                            |                                  |                            | No   | 4                     | 300                                  | 10                                     | 75                 |           |         | 850.00            |  |
|                              | MOD-3  | H/P   | 20-20 $\pm$ 0.5                            | 15                | 0.03   | No  |                            |                                  |                            | No   | 1                     | 100                                  | 40                                     | 82                 | 70        | Yes     | 950.00            |  |
|                              | PB1PGT   |   | 0-1M                                       |                   |        |   |                            |                                  |                            | No   |                       |                                      |  |                    |           |         | 240.00            |  |
|                              | PB2PG PB2PGT5  |   | 0-1M                                       |                   |        |   | 1                          |                                  |                            | No   |                       |                                      |  |                    |           |         | 260.00            |  |
| ENCORE ELECTRONICS           | DL2010   | H   | 11-75 +0.1                                 | 18                |        | No  | 158                        | 2                                | 0                          | No   | 5                     | 79                                   | Sel.                                   |                    |           | No      | 2150.00           | No contacts in signal path; auto mute; operate/standby switch.   |
| EXPOSURE                     | VII  |   |  |                   |        |   |                            | 1                                | 0                          | No   |                       |                                      |  |                    |           | Yes     | 975.00            | Dual mono; external power supply required. As above.   |
|                              | XI   |   |  |                   |        |   |                            | 1                                | 0                          | No   |                       |                                      |  |                    |           | Yes     | 1275.00           |  |
| EXPRESSIVE TECHNOLOGIES      | SU-1   |   | 0.7-150 +0.1, -0.1                         | 25                |        | I/O                                       |                            |                                  |                            | No   |                       |                                      |  | 100                | Yes       | 2500.00 | 28-dB fixed gain. |  |
| FM ACOUSTICS                 | Resolution Series 244 Version "A"                          |   | 2-100 $\pm$ 3                              | 20                | 0.03   |   | 100                        | 1                                | 0                          | No   |                       |                                      |  |                    | 74        | Yes     | 7360.00           | Class A.   |
|                              | Resolution Series 244 Version "B"                          |   | 2-100 $\pm$ 3                              | 20                | 0.025  |   | 100                        | 1                                | 0                          | Yes  | 1.58                  | 300                                  | Var.                                   |                    | 76        | No      | 6740.00           |  |
|                              | Resolution Series 244 Version "C"                          |   | 2-100 $\pm$ 3                              | 20                | 0.025  |   | 100                        | 1                                | 0                          | Yes  |                       |                                      |  |                    |           |         | 5360.00           |  |
| FORTE AUDIO                  | 2  |   | 1-100 +0.3                                 | 20                | 0.02   |   | 200                        | 1                                | 0                          | No   |                       | 100                                  | Sel.                                   | 90                 | 85        | Yes     | 990.00            | Selectable gain; external power supply.  |
| GOLDMUND                     | Mimesis 2 (RO)   |   | 0-850 $\pm$ 3                              | 40                | 0.01   |   | 100                        | 2                                | 0                          | Sel.   |                       |                                      |  |                    |           | Yes     | 7690.00           | Without Model PH01 phono module, \$5990.00; a.c. polarity switch; star ground configuration. Without phono stage, \$2990.00.   |
|                              | Mimesis 7  |   | 0-650 $\pm$ 3                              | 35                | 0.01   |   | 100                        | 2                                | 0                          | Sel.   |                       |                                      |  |                    |           |         | 3490.00           |  |
| GORDON INSTRUMENTS           | Gordon(RI)   |   |  |                   |        |   |                            |                                  |                            |  |                       |                                      |  |                    |           |         |                   | Custom-designed.   |
| GRUNDIG                      | Fine Arts  | T   | 2.2-100                                    |                   | 0.01   |   | 200                        | 1                                | 0                          | No   |                       |                                      |  |                    |           |         | 3500.00           | Triode design.   |
| HAFLER                       | SE100  |   | 20-20 $\pm$ 0.1                            | 7                 | 0.005  |   | 45                         | 1                                | 2                          | No   |                       | 65                                   | Adj.                                   | 87                 | 80        | Yes     |                   | Optional phono stage. Kit, \$200.00. Kit, \$425.00. J-FET; remote operation of Iris tuner and Iris CD player. J-FET; optional remote, \$250.00.  |
|                              | DH100  |   | 20-20 $\pm$ 0.25                           | 8                 | 0.005  |   |                            | 1                                | 2                          | No   | 1.2                   | 180                                  |  | 85                 |           | No      | 215.00            |  |
|                              | Series 2   |   |  |                   |        |   | 50                         | 3                                | 2                          | No   | 1.25                  | 300                                  | Adj.                                   |                    |           | No      | 450.00            |  |
|                              | DH110 Iris(RI)   |   | 20-20 +0.1, -0.1                           | 12                | 0.001  |   | 200                        | 3                                | 0                          | No   | 0.35                  | 70                                   | Adj.                                   | 87                 | 80        | Yes     | 800.00            |  |
|                              | Iris NR(RO)  |   | 20-20 $\pm$ 0.1                            | 7                 | 0.005  |   | 200                        | 3                                | 0                          | No   | 0.35                  | 70                                   | Adj.                                   | 87                 | 80        | Yes     | 650.00            |  |
| HARMAN KAROON CITATION       | Twenty-one   |   | 0.25-250 +0.3                              | 10                | 0.001  |   | 65                         | 2                                | 2                          | No   | 1.1                   | 160                                  | 125                                    | 83                 | 78        | Yes     | 629.00            | Video switching; selectable turnover on tone controls.   |
|                              | Twenty-five (RI)   |   | 0.25-250 +0.3                              | 10                | 0.002  |   | 65                         | 4                                | 2                          | No   | 1.1                   | 180                                  | Sel.                                   | 83                 | 78        | Yes     | 899.00            |  |
| HEYBROOK                     | C-3  |   | 20-50                                      |                   | 0.05   |   |                            | 2                                | 0                          | No   |                       |                                      |  |                    | 80        | Yes     | 698.00            |  |



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DR-5

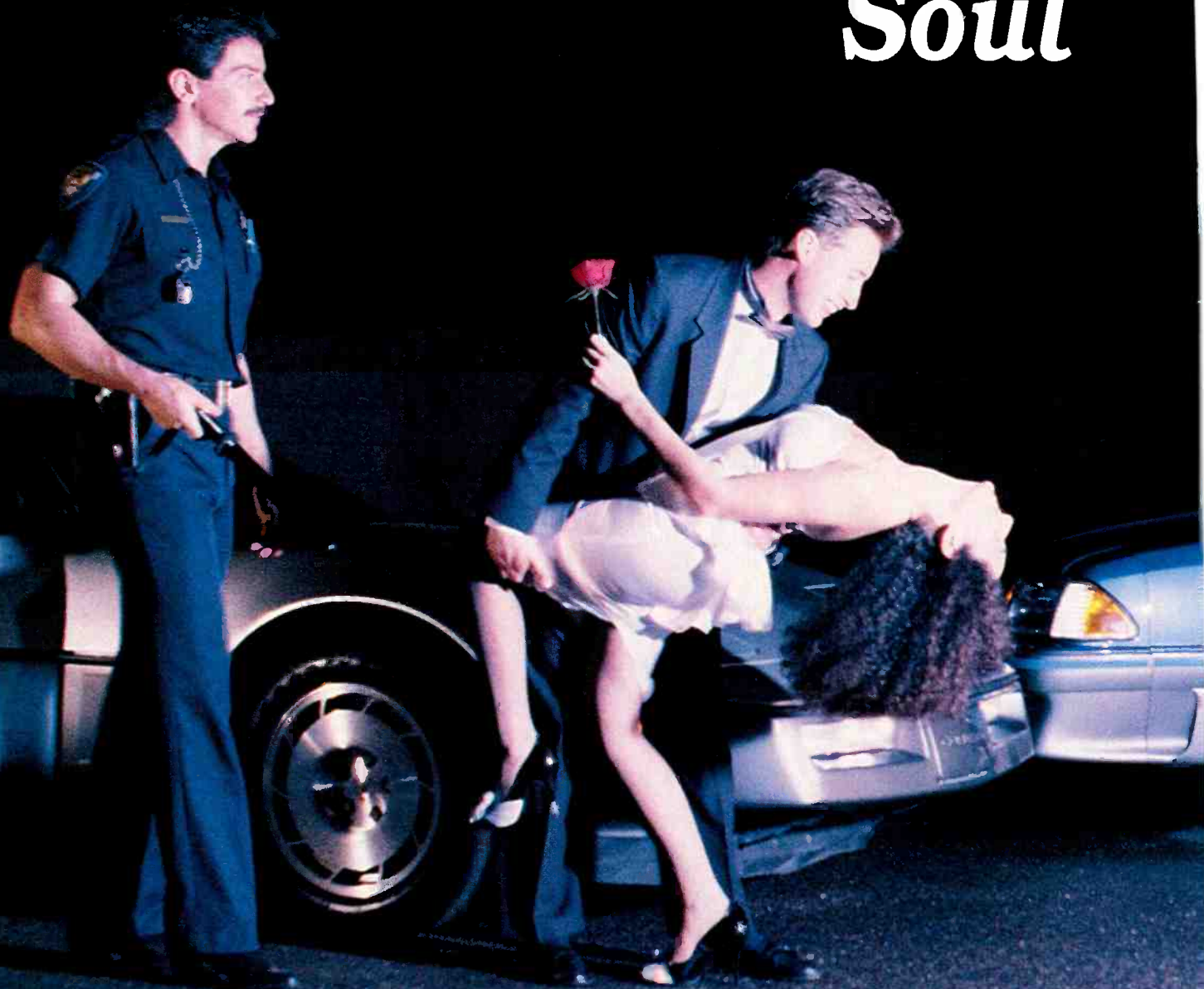
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# PREAMPLIFIERS

| MANUFACTURER         | Model<br>(R) = Remote Included,<br>(RO) = Remote Optional | T/M  | Type: Tube = T, Hybrid = H, Mono = M, Digital = D,<br>Moving Coil Stage Only = MC, Phono Stage Only = P | Frequency Response,<br>Hz to kHz, $\pm$ dB | Maximum Output, V | THD, % | Balanced Inputs = 1, Balanced Outputs = 0 | High-Level Sensitivity, mV | Number of Tape & Processor Loops | Does Unit Invert Polarity? | MM Phono Sensitivity, mV,<br>for 0.5 V Output at 1 kHz | MM Phono Overload, mV | MM Phono Input Capacitance, pF | MC Phono S/N, -dB, "R" = R, "X" = X, "W" = W, re. 5 mV | Moving Coil Input? | Price, \$ | Notes   |   |
|----------------------|---|------|---|--|-------------------|--------|---|----------------------------|----------------------------------|----------------------------|--|-----------------------|--------------------------------|--|--------------------|-----------|---|---|
|                      |   |      |   |  |                   |        |   |                            |                                  |                            |  |                       |                                |  |                    |           |   |   |
| INTEGRA AUDIO        | Integra Reference TP1                                     | T    |   | 50   |                   |        | 0   | No                         | 2                                |                            | 120  |                       | No                             | 7500.00  |                    |           | External power supply; dual mono.               |   |
|                      |   | T    |   | 50   |                   |        | 0   | No                         | 2                                |                            | 120  |                       | No                             | 3000.00  |                    |           | External power supply.                          |   |
| JAOIS                | JP-30   | T    |   |  |                   |        | 2   | 0                          | No                               |                            |  |                       | No                             | 5500.00  |                    |           | Two chassis.                                    |   |
|                      | JP-30MC   | T    |   |  |                   |        | 2   | 0                          | No                               |                            |  |                       | Yes                            | 5995.00  |                    |           | As above.                                       |   |
|                      | JP-80   | T    |   |  |                   |        | 2   | 0                          | No                               |                            |  |                       | No                             | 8995.00  |                    |           | As above.                                       |   |
|                      | JP-80MC   | T    |   |  |                   |        | 2   | 0                          | No                               |                            |  |                       | Yes                            | 11,500.00  |                    |           | As above.                                       |   |
|                      | JP-200  | T    |   |  |                   |        | 2   | 0                          | No                               |                            |  |                       | Yes                            | 18,000.00  |                    |           | Four chassis; dual mono; external power supply. |   |
|                      | DEFY DP-60  | H    |   |  |                   |        | 2   | 0                          | No                               |                            |  |                       | Yes                            | 3500.00  |                    |           | Solid-state MC stage.                           |   |
| JRM                  | Preamp  |      | 0-50 +0,-1  | 12   | 0.01              |        | Sel.                                      | 2                          | Opt.                             | No                         | 1.25   |                       | Sel.                           | 88   | 78                 | Yes       | 450.00  | Includes 10-watt/channel headphone amp; video inputs; infrasonic filter.                                  |
|                      | PEM   |      | 0-50 +0,-1  | 12   | 0.01              |        | Sel.                                      | 3                          | †                                | No                         | 1.25   |                       | Sel.                           | 88   |                    | No        | 1300.00   | †Two 3-band pre-EQs; 6-band master EQ; 4-band monitor EQ. Cross-fade input select; master and cue busses. |
| KEBSCHULL            | 150   | T    | 10-2M   | 32   |                   |        |   | 0                          |                                  |                            |  |                       |                                | 60   | Yes                |           | 3695.00   |   |
| KENWOOD              | Basic-C2  |      | 1-350 +0,-3   | 1  | 0.001             |        | 150                                       | 2                          | 2                                |                            | 2.5  | 200                   |                                | 94   | Yes                |           | 329.00  |   |
| KINERGETICS RESEARCH | KPA-2   |      | 20-300 $\pm$ 0.2  | 12   | 0.02              | 0      | 200                                       | 1                          | 0                                | Sel.                       | 0.3  | 20                    | Var.                           | 77   | 73                 | Yes       | 1290.00   | Without phono stage, \$895.00.  |
| KLIMO                | Argo  | T/MC | 10-450 +0,-3  | 10   | 0.2               |        |   |                            | Yes                              |                            |  |                       |                                | 75   | Yes                |           | 1350.00   | External power supply; adjustable input impedance.  |
|                      | Merlin  | T    | 3-450 +0,-3   | 25   | 0.07              |        |   | 1                          | 0                                | No                         | 1.0  | 600                   | 20                             | 76   | No                 |           | 3500.00   |   |
| KLYNE AUDIO ARTS     | SK-2A   | MC   | 0.1-20 +0,-0.2  | 7  | 0.01              | 0      | 100                                       | 0                          | 0                                | No                         | 5.3  | 100                   | Sel.                           |  | 70                 | Yes       | 750.00  |   |
|                      | SK-4A   |      | 0.1-20 +0,-0.2  | 10   | 0.01              | 0      | 100                                       | 1                          | 0                                | Sel.                       | 5.3  | 100                   | Sel.                           |  | 70                 | Yes       | 2695.00   |   |
|                      | SK-5A   |      | 0.1-20 +0,-0.2  | 10   | 0.01              | 0      | 100                                       | 1                          | 0                                | Sel.                       | 5.3  | 100                   | Sel.                           |  | 76                 | No        | 3250.00   |   |
|                      | SK-5AM  |      | 0.1-20 +0,-0.2  | 10   | 0.01              | 0      | 100                                       | 1                          | 0                                | Sel.                       |  |                       |                                |  |                    |           | 2875.00   |   |
|                      | SK-5AL  |      | 0.1-20 +0,-0.2  | 10   | 0.01              | 0      | 100                                       | 1                          | 0                                | Sel.                       |  |                       |                                |  |                    |           | 2450.00   | No phono amp.   |
|                      | System Six 6L   |      | 1-200 +0,-0.2   | 10   | 0.005             |        | 100                                       | 2                          | 0                                | No                         |  |                       |                                |  |                    |           | 1550.00   | Modular system of models below.   |
|                      | 6LX   | P    | 1-200 +0,-0.2   | 10   | 0.005             |        | 100                                       | 2                          | 0                                | No                         |  |                       |                                |  |                    |           | 1850.00   | External power supply.  |
|                      | 6P  |      |   | 10   | 0.01              |        |   |                            |                                  | No                         | 7.1  | 150                   | Sel.                           | 85   | 70                 | Yes       | 595.00  | Plug-in phono stage; adjustable gain.   |
|                      | 6PX   | MC   |   | 10   | 0.01              |        |   |                            |                                  | No                         |  |                       |                                |  | 70                 | Yes       | 895.00  | Plug-in phono stage.  |
|                      | 6PZ   | MC   |   | 10   | 0.01              |        |   |                            |                                  | No                         |  |                       |                                |  | 76                 | Yes       | 950.00  | As above.   |
| KRELL                | KSP-7B  |      | 5-120 +0,-0.5   | 7.5  | 0.03              | 0      |   | 1                          | 0                                | Sel.                       | 8.4  | 200                   |                                | 75   | 68                 | Yes       | 2700.00   | External power supply; d.c. coupled; passive and active phono EQ.   |
|                      | KBL   |      | 5-50 +0,-0.5  | 32   | 0.01              | I/O    |   | 2                          | 0                                | Sel.                       |  |                       |                                |  |                    |           |   |   |
|                      | KPA   | P    | 20-20 $\pm$ 0.1   | 8  | 0.05              |        |   |                            |                                  | No                         | 15.8   | 250                   |                                | 65   | 60                 | Yes       |   | High level only; d.c. coupled. Passive EQ; RIAA adjustments; d.c. coupled.                                |
|                      | KRS-Balanced  | M    | 1-500   | 20   | 0.001             | I/O    | 100                                       | 2                          | 0                                | Sel.                       |  | 800                   | 100                            |  | 90                 | Yes       | 11,000.00                                       | D.C. coupled.   |
| LAZARUS              | Cascade Basic   | T    | 20-20 +0,-1   | 50   | 0.05              |        | 50  | 1                          | 0                                | Yes                        | 1.5  | 600                   | 100                            |  | No                 |           | 690.00  |   |
|                      | Cascade Classic   | T    | 20-20 +1,-0   | 50   | 0.05              |        | 50  | 1                          | 0                                | Yes                        | 1.1  | 600                   | 100                            |  | No                 |           | 950.00  |   |
|                      | Cascade Deluxe  | H    | 20-20 +1,-0   | 50   | 0.05              |        | 50  | 1                          | 0                                | †                          |  | 150                   | 100                            |  | 75                 | Yes       | 1200.00   | †Inverts polarity for line only.  |
|                      | Balanced Classic  | H    | 20-20 $\pm$ 0.5   | 10   | 0.02              | 0      | 50  | 1                          | 0                                | Sel.                       | 1.1  | 600                   | 100                            |  | No                 |           | 1695.00   | External power supply.  |
|                      | Balanced Deluxe   | H    | 20-20 $\pm$ 0.5   | 10   | 0.02              | 0      | 50  | 1                          | 0                                | Sel.                       |  | 150                   | 100                            |  | 75                 | Yes       | 1985.00   | As above.   |
| LEGACY               | The Preamplifier  |      | 1-100 $\pm$ 1   | 10   | 0.01              |        | 450                                       | 2                          | 2                                | No                         | 0.5  | 100                   | 75                             | 89   |                    | No        | 496.00  |   |
| MARK LEVINSON        | No. 26  |      | 20-20 +0,-0.2   | 6  | 0.01              | I/O    |   | 2                          | 0                                | Sel.                       | Sel.   | 415                   | Sel.                           |  | Yes                |           | 4220.00   | Price varies with input and power-supply options.   |
| LINN HI-FI           | LK1(RO)   |      |   |  |                   |        | 200                                       | 2                          | 0                                | Yes                        | 5  |                       |                                |  | Yes                |           | 1095.00   |   |
| LUXMAN               | TP117   |      | 4.5-350 +0,-3   | 8  | 0.006             |        | 150                                       | 1                          | 4                                | No                         | 2.5  | 150                   | 200                            | 86   | No                 |           | 1250.00   | Multi-zone tuner/preamp; with video amps.   |
|                      | LE109   | P    | 20-20 +0,-0.3   |  | 0.005             |        |   |                            | No                               | 2.5                        | 250  | 200                   | 101                            | 86   | Yes                |           | 500.00  |   |
| LYDKRAFT             | MP-1A   | T    | 15-60 +0,-0.5   | 15   | 0.2               | I/O    | 250                                       | 0                          | 0                                |                            |  |                       |                                |  |                    |           |   |   |
| MADISON FIELDING     | CA700P(RO)  |      | 20-50   | 5  | 0.005             |        | 100                                       | 1                          | 7                                | Yes                        |  |                       |                                |  |                    |           | 1200.00   | Part of multi-room system.  |
| MAVRICK              | Ultimate Reference Phono Processor                        | P    | 1-500 $\pm$ 0.1   | 10   |                   |        |   |                            | No                               |                            | 500  |                       | 130                            | 100  | Yes                |           | 10,000.00                                       | K-FET, valve amplifier; external power supply.  |
| McINTOSH             | C34V  |      | 20-20 +0,-0.5   |  | 0.01              |        | 250                                       | 5                          |                                  | 2                          | 100  | 65                    | 87                             |  |                    |           | 2195.00   |   |
|                      | C35(RI)   |      | 20-20 +0,-0.5   | 8  | 0.007             | 0      | 250                                       | 5                          |                                  | 2.5                        | 90   | 65                    | 87                             |  |                    |           | 1995.00   |   |

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# PREAMPLIFIERS

| MANUFACTURER           | PHONO STAGE   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    | Notes   |  |
|------------------------|---|--|--|-------------------|-------------------|---|----------------------------|----------------------------------|----------------------------|--|-----------------------|--------------------------------|--|--|--------------------|---|--|
|                        | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional                          | Type: T = Tuner, Model = M, Mono = MC, Stereo = S, Stereo Processor = SP | Frequency Response,<br>Hz to kHz, $\pm$ dB | Maximum Output, V | THD, %            | Balanced Inputs = 1, Balanced Outputs = 0 | High-Level Sensitivity, mV | Number of Tape & Processor Loops | Does Unit Invert Polarity? | MM Phono Sensitivity, mV,<br>for 0.5 V Output at 1 kHz | MM Phono Overload, mV | MM Phono Input Capacitance, pF | MM Phono S.N. $\geq$ 60, $\geq$ 60, $\geq$ 60, $\geq$ 60 | MM Phono S.N. $\geq$ 60, $\geq$ 60, $\geq$ 60, $\geq$ 60 | Price, \$          |   |  |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| MEITNER AUDIO          | PA-6i(RI)   |  | 0.1-100                                    | 8                 | 0.01              |   | 1                          | 0                                | Sel.                       | Sel.   |                       |                                |  |  | 2495.00            | Floating-charge power supply; with wired remote, \$2395.00. |  |
| MELOS AUDIO            | GK-1 + 1<br>MA-111<br>MA-110<br>MA-222B   | T  | 2-300 $\pm$ 1                              | 50                | 0.07              | 100                                       | 1                          | 0                                | Yes                        | 0.45   | 450                   | 180                            | 75   | 68   | Yes                | 1395.00   | External power supply. As above.<br>Two chassis; dual mono.  |
|                        |   | H  | 2-300 $\pm$ 1                              | 22                | 0.07              | 100                                       | 1                          | 0                                | Yes                        | 0.25   | 200                   | 180                            | 75   | 75   | Yes                | 1195.00   |  |
|                        |   | H  | 2-300 $\pm$ 1                              | 22                | 0.07              | 100                                       | 1                          | 0                                | Yes                        | 0.25   | 200                   | 180                            | 75   | 75   | Yes                | 995.00  |  |
|                        |   | H  | 2-300 $\pm$ 1                              | 35                | 0.07              | 100                                       | 2                          | 0                                | Sel.                       | 0.09   | 300                   | 180                            | 85   | 75   | Yes                | 3395.00   |  |
| MERIDIAN               | 201(RO)   |  | 20-20 +0, -0.2                             | 2                 | 0.02              | 150                                       | 2                          | 0                                | No                         | 1.5  | 150                   | 100                            | 72   | 63   | Yes                | 1090.00   | Remote control of volume and source; with dual outputs for multi-room control, Model 202(RO).  |
| MFA SYSTEMS            | Magus A-3<br>Lumin-<br>escence II   | T<br>T   | 3-100 $\pm$ 1<br>3-200 $\pm$ 1             | 48<br>70          | 0.3<br>0.015      | 50<br>50                                  | 1<br>1                     | 0<br>0                           | Yes<br>No                  | 0.16<br>0.13   | 300<br>400            | 200<br>200                     | 82<br>90   | 62<br>70   | Yes<br>Yes         | 995.00<br>4460.00   |  |
| MIRROR IMAGE           | .2P<br>Phono  | P  | 1-500                                      | 12                | 0.01              | 0   | 2                          | 0                                | Sel.                       | Var.   | 300                   | Sel.                           | 75   | 70   | Yes                | 2500.00<br>750.00   | External power supply. Plug-in for model above.  |
| THE MOD SQUAD          | Line Drive<br>Deluxe Line<br>Drive<br>Phono Drive<br>Duel                           | P  | 0-200<br>0-200                             |                   | .0001<br>.0001    |   | 2<br>2                     | 0<br>0                           | No<br>No                   |  |                       |                                |  |  |                    | 595.00<br>1095.00   | Passive line level only. As above.   |
|                        |   |  | 20-200 +1, -3<br>0-200 +0, -3              | 20<br>20          | 0.001<br>0.001    | 87  | 2<br>2                     | 0<br>0                           | No<br>No                   | 2.5<br>2.5   | Adj.<br>Adj.          | 80<br>80                       | 65<br>65   | Yes<br>Yes   | 1295.00<br>2595.00 |   |  |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| MOTIF                  | MC7<br>MC8<br>MC9   |  | 5-100<br>5-100<br>5-100                    | 10<br>10<br>10    | 0.1<br>0.1<br>0.1 |   | 2<br>2<br>2                |                                  |                            |  | 150<br>150            |                                |  |  | Yes<br>Yes<br>Yes  | 3500.00<br>2250.00<br>1295.00                               | Dual mono.   |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| MUSEATEX AUDIO         | Melior<br>Control<br>Center(RI)<br>Melior<br>Phono<br>Center                        | P  | 0.1-100                                    |                   | 0.01              |   | 5                          | 0                                | No                         |  |                       |                                |  |  |                    | 1850.00   | Multi-room switcher.<br>Optional phono stage for model above.  |
|                        |   |  |  |                   | 0.01              |   |                            | No                               |                            |  | Adj.                  | Adj.                           | Opt.   |  | 400.00             |   |  |
| MUSE ELECTRONICS       | One   |  | 10-140 +0, -3                              | 28                | 0.10              | 50  | 1                          | 0                                | Sel.                       |  |                       |                                |  | 64   | Yes                | 1500.00   | External power supply.   |
| MUSIC REFERENCE        | RM 1/2 MKII   | T  | 0.01-200 +0, -1                            | 30                | 0.005             | 25  | 2                          | 0                                | No                         | 0.12   | 1V                    | 200                            | 80   | 60   | Yes                | 4000.00   | External power supply; auto mute and off; adjustable line and phono gain.<br>Auto mute; adjustable MC gain and impedance.<br>Auto mute; adjustable gain. |
|                        | RM-4C   | T/MC   | 2-200 +0, -1                               | 20                | 0.01              |   |                            |                                  | Yes                        |  |                       |                                |  | 64   | Yes                | 750.00  |  |
|                        | RM-5 MKII   | T  | 2-100                                      | 30                | 0.01              | 25  | 2                          | 0                                | Yes                        | 0.25   | 1V                    | 200                            | 81   | 61   | Yes                | 1150.00   |  |
| NAD                    | 1300<br>1700(RI)  |  | 20-20 $\pm$ 0.3<br>20-20 $\pm$ 0.3         | 12<br>12          | 0.02<br>0.04      | 80<br>80                                  | 3<br>3                     | 2<br>2                           | No<br>No                   | 1.3<br>1.4   | 200<br>180            | Sel.<br>120                    | 80<br>76   | 78<br>76   | Yes<br>Yes         | 399.00<br>799.00  | Tuner/preamp (see also "Tuners").  |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| NAIM AUDIO             | NAC 62<br>NAC 72  |  | 20-20 $\pm$ 0.5<br>20-20 $\pm$ 0.5         | 7.5<br>7.5        | 0.1<br>0.1        | 75<br>75                                  | 1<br>2                     | 0<br>0                           | No<br>No                   | 2<br>2   | 200<br>200            |                                |  |  | Yes<br>Yes         | 795.00<br>1145.00   | Phono input can be ordered as MM, MC, or high level.<br>Two phono inputs as above.   |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| NAKAMICHI              | CA-7A(RI)<br>CA-5AII  |  | 1-100 +0, -3<br>1-100 +0, -3               | 7<br>7            | 0.002<br>0.002    | 150<br>150                                | 2<br>2                     | 3<br>2                           | No<br>No                   | 0.625<br>0.63  | 320<br>270            | Sel.<br>Sel.                   | 88<br>88   | 87<br>81   | Yes<br>Yes         | 2595.00<br>1095.00  | Full remote for Nakamichi units.   |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| NIKKO                  | B-400<br>B-600  |  | 20-20 $\pm$ 0.5<br>20-20 $\pm$ 0.2         | 13<br>18          | 0.002<br>0.002    | 150<br>150                                | 3<br>4                     | 2<br>4                           | No<br>No                   | 2.5<br>2.5   | 200<br>200            | 150<br>150                     | 93<br>94   | 77<br>81   | Yes<br>Yes         | 439.95<br>599.95  |  |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| NOVA ELECTRO-ACOUSTICS | CPA-100A<br>PPA-202   | MC   | 1-200 +0, -3<br>0.05-1.5M +0, -3           | 12<br>1           | 0.01<br>0.01      | No<br>No                                  | 98                         | 1                                | 0                          | Sel.<br>No   | 2.5<br>2.5            | 250<br>40                      | 75   |  | Opt.<br>Yes        | 1995.00<br>300.00   | Selectable gain. Plug-in for above model.  |
|                        |   |  |  |                   |                   |   |                            |                                  |                            |  |                       |                                |  |  |                    |   |  |
| OCTAVE RESEARCH        | Passive Control Module  |  |  |                   |                   |   | 1                          | 0                                | No                         |  |                       |                                |  |  |                    | 995.00  |  |
| ONIX AUDIO             | OA24(RO)  |  | 20-20 $\pm$ 0.5                            | 7.5               | 0.1               | 1   | 7.5                        | 2                                | 0                          | No   | 2.0                   | 200                            |  |  | Yes                | 995.00  | Powered by S.O.A.P. 2 supply, \$695.00, or by OA401 amp.   |
| ONKYO                  | P-3160(RI)<br>Integra<br>P-304<br>Grand<br>Integra<br>P-308                         |  | 15-30 $\pm$ 1                              | 5                 | 0.009             |   | 3                          | 3                                | No                         | 2.5  | 120                   |                                | 83   |  | No                 | 270.00  | CD direct; remote has volume control.<br>Dual record-output selectors.<br>As above.  |
|                        |   |  | 0.8-170 $\pm$ 3                            | 6                 | .0005             |   | 2                          | 2                                | No                         | 2.5  | 210                   |                                | 92   | 81   | Yes                | 530.00  |  |
|                        |   |  | 0.8-170 $\pm$ 3                            | 6                 | .0005             |   | 3                          | 2                                | No                         | 2.5  | 210                   |                                | 92   | 81   | Yes                | 660.00  |  |
| PAC                    | Pro-Reference<br>IIB<br>Pro-Reference<br>III<br>C.P.R. III<br>C.P.R. II<br>C.P.R. I | T  | 10-100 +0, -1                              | 28                | 0.01              | 30  | 1                          | 0                                | No                         | 0.3  | 350                   | 125                            |  |  | Yes                | 3995.00   | Line level only.<br>Selectable MC gain and impedance.<br>Line level only.  |
|                        |   | T  | 10-100                                     | 28                | 0.01              | 30  | 2                          | 0                                | No                         |  |                       |                                |  |  |                    | 2995.00   |  |
|                        |   |  | 0-100 +0, -0.1                             | 10                | 0.01              | 30  | 1                          | 0                                | No                         | 0.3  | 300                   | 75                             |  |  | Yes                | 1995.00   |  |
|                        |   |  | 0-100 +0, -0.1                             | 10                | 0.01              | 30  | 1                          | 0                                | No                         | 0.3  | 300                   | 100                            |  |  | No                 | 1600.00   |  |
|                        |   |  | 0-100 +0, -0.1                             | 10                | 0.01              | 30  | 1                          | 0                                | No                         |  |                       |                                |  |  | No                 | 1250.00   |  |

# High Definition® has never been more down to earth.

Every audiophile, every music lover wants to hear through the veil of his or her audio system, straight to the music.

The new SP14 and popular SP9 hybrid preamplifiers put that dream within everyone's reach, bringing together superlative sonics and affordability. But without sacrificing Audio Research's legendary quality of design, construction and service.

For sonics and control features nearly equal to the state of the art, choose the SP14—the preamplifier that will take you as far as your system is ever likely to go. It will bring the best out of new components, for years to come.

And while more modest in features and performance, the SP9 has been delighting thousands of

cost-conscious audiophiles and music lovers the world over for two years. It's a proven performer.

Both preamplifiers reflect the 20-year Audio Research tradition of distinguished engineering. Ultra-critical parts selection and unstinting handcrafted manufacture assure honest musical satisfaction today, and reliable performance for years to come. Like every Audio Research product, the SP14 and SP9 represent not just a purchase, but an investment.

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classic years

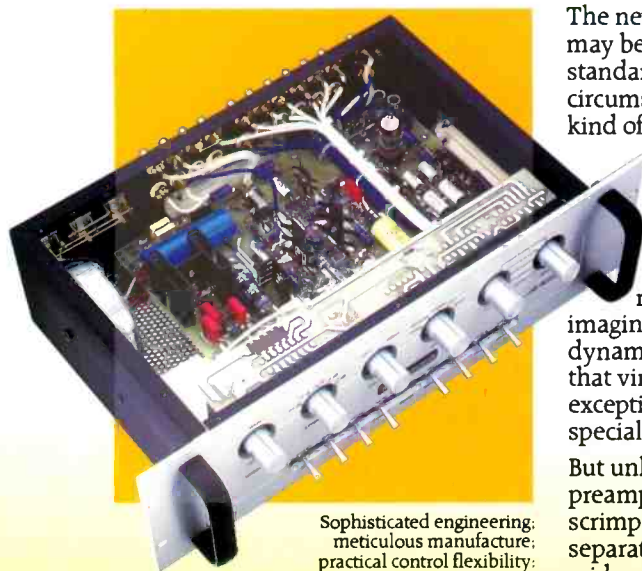
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# Very likely, the audio value of the decade.



Sophisticated engineering; meticulous manufacture; practical control flexibility: the SP14 has everything a state-of-the-art preamp should have.

The new SP14 Hybrid Preamplifier may be the scion of the world-standard SP15. But under no circumstance does it stand in any kind of shadow. The SP14 is a stellar performer in its own right, in every significant respect.

The SP14's musicality comes surprisingly close to the state of the art, with soundstage of remarkable depth and breadth; imaging of uncanny solidity; palpable dynamic authority; timbral accuracy that virtually recreates live music; an exceptionally low noise floor; and a special ease with frequency extremes.

But unlike many high-performance preamplifiers, the SP14 doesn't scrimp on control features. It has separate Gain and Attenuation for wide-ranging-yet-subtle level management. Separate Input and Record Output selectors (with a

common menu) permit exceptional flexibility in playing and recording; owners can listen to one source while recording from another. The Bypass switch allows owners to remove the Balance and Mode controls from the signal path, for greater sonic purity. There are two separate sets of outputs, and three power outlets. And, of course, the SP14 features its own version of the "hybrid" technology that has made Audio Research electronics world-famous.

As with every Audio Research product, SP14 parts quality, construction and factory support are the finest in the audio industry, with a two-decade track record to prove it.

And all this comes at only half the cost of the celebrated SP15. With a price like that, no other preamp can touch the SP14 for value.



Anodized black front panel and knobs available at additional cost.



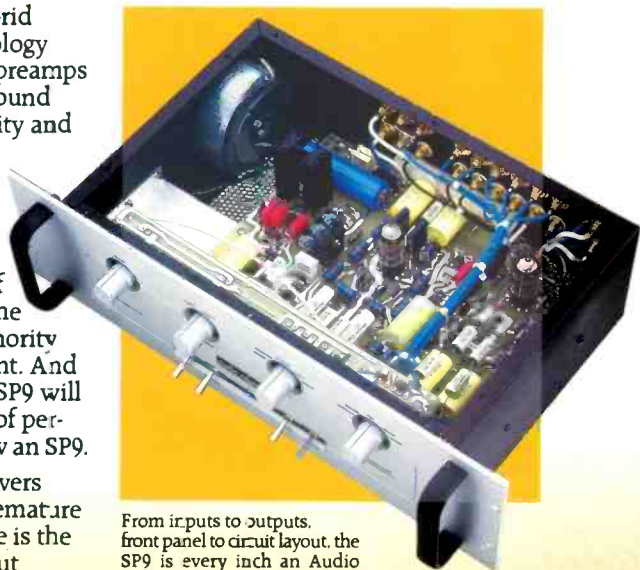
# Never have so many enjoyed so much preamp for so little.

In a day and age when the price of audio eloquence keeps going up and up, Audio Research's SP9 Hybrid Preamplifier has been a breath of fresh air. Because of it, thousands of ordinary music lovers—not to mention many audio perfectionists—have discovered that it needn't cost an arm and a leg to achieve excellence in music reproduction. In fact, some owners think the SP9 is underpriced!

To be sure, the SP9 is a full-blooded member of the Audio Research family, with no shortcuts taken in design, construction or performance. As much as any other Audio Research product, the SP9 embodies an investment in lasting value.

SP9 owners get the same hybrid tube/solid state circuit technology that's made Audio Research preamps world famous. That means sound quality of convincing neutrality and musicality. The SP9's sound-stage is broad and lucid, its imaging solid, its way with dynamics impressive, its musicality subtle but potent. Insert an SP9 into a system of even moderate quality, and the increased definition and authority become immediately apparent. And as a system is upgraded, the SP9 will keep giving it the extra edge of performance. It's hard to outgrow an SP9.

For audiophiles and music lovers tired of compromises and premature obsolescence, the clear choice is the SP9—the preamp for just about everyone!



From inputs to outputs, front panel to circuit layout, the SP9 is every inch an Audio Research preamp.



Anodized black front panel and knobs available at additional cost.





## SP14 SPECIFICATIONS

### FREQUENCY RESPONSE:

High level section:  $\pm 5$ dB, 5Hz to 50kHz, -3dB points below 1Hz and above 200kHz  
Magnetic Phono:  $\pm 3$ dB of RIAA, 30Hz to 40kHz

### DISTORTION:

Less than .01% at 2V RMS output.

### GAIN:

Phono input to tape output: 46dB,  
Phono input to main output: 66dB,  
High level inputs to tape output: 0dB,  
High level inputs to main output: 20dB

### INPUTS (7):

Phono, C-D, Tuner, Video, Spare, Tape 1, Tape 2

### OUTPUTS (4):

(2) Main, (2) Recorder

### CONTROLS (6):

Gain, Attenuation, Balance, Mode, Record Out, Input

### SWITCHES (8):

Power, Outlets, Bypass, Mute, Copy, Tape 1 to 2/2 to 1, Tape 2/1, Monitor

### INPUT IMPEDANCE:

50K ohms Line Inputs; 47K Phono (Phono provisions for any value below 47K ohms or added input capacitance for matching certain magnetic cartridges.)

### OUTPUT IMPEDANCE:

250 ohms main output, 1000 ohms recorder output. Recommended load 60K-100K ohms and 100pF. (20K ohms minimum and 1000pF maximum)

### MAXIMUM INPUTS:

Magnetic phono, 200mV at 1kHz (1000mV RMS, 10kHz). High level inputs essentially overload-proof.

### RATED OUTPUTS:

2V RMS 5Hz to 50kHz, all outputs; 60K ohm load (main output capability is 50V RMS output at 1/2% THD at 1kHz into a 100K ohm load with 5V RMS high level input)

### POWER SUPPLIES:

Electronically-regulated low and high voltage supplies and electronic decoupling. Shielded toroid transformer. Line regulation better than .01%.

### NOISE:

High Level: (1) 70uV RMS maximum residual unweighted wideband noise at main output with gain control minimum (98dB below 5V RMS output) (2) More than 100dB below 1V RMS input (less than 7uV equivalent input noise)  
Phono: 0.12uV equivalent input noise, IHF weighted, shorted input (78dB below 1mV input)

### TUBE COMPLEMENT:

1 - 6DJ8/ECC88 dual triodes (Hybrid FET/Tube audio circuit, solid-state power supply)

### POWER REQUIREMENTS:

100-135VAC 60Hz (200-270VAC 50/60Hz) 60 Watts

### DIMENSIONS:

19" (48 cm) W x 5 1/4" (13.4 cm) H (standard rack panel) x 10 1/4" (26 cm) D. Handles extend 1 5/8" (4.1 cm) forward of front panel. Rear chassis fittings extend 7/8" (2.3 cm)

### WEIGHT:

12 lbs. (5.5 kg) Net; 21 lbs. (9.6 kg) Shipping

## SP9 SPECIFICATIONS

### FREQUENCY RESPONSE:

High level section:  $\pm 5$ dB, 5Hz to 50kHz, -3dB points below 1Hz and above 200kHz  
Magnetic Phono:  $\pm 3$ dB of RIAA, 30Hz to 40kHz

### DISTORTION:

Less than .01% at 2V RMS output. (typically less than .005% in midband)

### GAIN:

Phono input to tape output: 46dB,  
Phono input to main output: 66dB,  
High level inputs to tape output: 0dB,  
High level inputs to main output: 21dB

### INPUT IMPEDANCE:

50K ohms Line Inputs; 47K Phono (Phono provisions for any value below 47K ohms or added input capacitance for matching certain magnetic cartridges.)

### OUTPUT IMPEDANCE:

250 ohms main output, 850 ohms recorder output. Recommended load 60K ohms and 100pF. (20K ohms minimum and 1000pF maximum)

### MAXIMUM INPUTS:

Magnetic phono, 200mV at 1kHz (1000mV RMS, 10kHz). High level inputs essentially overload-proof.

### RATED OUTPUTS:

2V RMS 5Hz to 50kHz, all outputs; 60K ohm load (main output capability is 50V RMS output at 1/2% THD at 1kHz into a 100K ohm load with 5V RMS high level input)

### POWER SUPPLIES:

Electronically-regulated low and high voltage supplies and electronic decoupling. Shielded toroid transformer. Line regulation better than .01%.

### NOISE:

High Level: (1) 70uV RMS maximum residual unweighted wideband noise at main output with gain control minimum (98dB below 5V RMS output) (2) More than 100dB below 1V RMS input (less than 7uV equivalent input noise)

Phono: 0.12uV equivalent input noise, IHF weighted, shorted input (78dB below 1mV input)

### TUBE COMPLEMENT:

2 - 6DJ8/ECC88 dual triodes (Hybrid FET/Tube audio circuit, solid-state power supply)

### POWER REQUIREMENTS:

100-135VAC 60Hz (200-270VAC 50/60Hz) 50 Watts

### DIMENSIONS:

19" (48 cm) W x 5 1/4" (13.4 cm) H (standard rack panel) x 10 1/4" (26 cm) D. Handles extend 1 5/8" (4.1 cm) forward of front panel. Rear chassis fittings extend 7/8" (2.3 cm)

### WEIGHT:

13 lbs. (5.9 kg) Net; 22 lbs. (10 kg) Shipping

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Double sets of gold-plated output jacks make the SP14 ideal for "bi-wired" audio systems.



The SP9's gold-plated jacks connect "ground" before "hot" and disconnect "hot" before "ground" for maximum system protection.



## Three-Year Limited Warranty

All Audio Research products are backed by a Three-Year Limited Warranty: vacuum tubes are warranted against defects for 90 days. For one year from date of purchase, Audio

Research pays round-trip freight charges on any equipment requiring warranty service at the factory. See your authorized Audio Research dealer for details.

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# PREAMPLIFIERS

| MANUFACTURER                 | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional                | Type: T = T, Hybrid = H, Mono = M, Digital = D,<br>Moving Coil Stage Only = MC, Phono Stage Only = P | Frequency Response,<br>Hz to kHz, $\pm 0.05$                      | Maximum Output, V | THD, %                  | PHONO STAGE                               |                   |             |             |                            |                |                    |                      |                            |                |                   |                               | Price, \$  | Notes |  |  |  |  |
|------------------------------|---|--|---|-------------------|-------------------------|---|-------------------|-------------|-------------|----------------------------|----------------|--------------------|----------------------|----------------------------|----------------|-------------------|-------------------------------|--|-------|--|--|--|--|
|                              |   |  |   |                   |                         | Balanced Inputs = 1, Balanced Outputs = 0 |                   |             |             | High-Level Sensitivity, mV |                |                    |                      | Does Unit Invert Polarity? |                |                   |                               |  |       | MM Phono Sensitivity, mV,<br>for 0.5 V Output at 1 kHz |  |  |  |
|                              |   |  |   |                   |                         | Number of Tape & Processor Loops          |                   |             |             | MM Phono Overload, mV      |                |                    |                      | MC Phono S.N., $\pm 0.5$ V |                |                   |                               |  |       | Moving Coil Input?                                     |  |  |  |
|                              |   |  |   |                   |                         | MM Phono Input Capacitance, pF            |                   |             |             | MC Phono S.N., $\pm 0.5$ V |                |                    |                      | Moving Coil Input?         |                |                   |                               |  |       |  |  |  |  |
| PARASOUND                    | P/FET-900<br>P/HP-750   |  | 8-100 $\pm 0.3$<br>5-65 $\pm 0.3$                                 | 10<br>8.5         | 0.005<br>0.006          |   | 150<br>150        | 2<br>2      | 2<br>2      | No<br>No                   | 2.5<br>2.5     | 220<br>200         | 175<br>175           | 85<br>83                   |                | No<br>No          | 395.00<br>235.00              | FET; variable loudness control;<br>C-MOS switching.<br>Variable loudness control; C-MOS<br>switching; high- and low-cut filters.   |       |  |  |  |  |
| PIONEER                      | C-91  |  | 20-20   | 8                 | 0.01                    |   |                   | 6           | 3           | No                         | 2.5            |                    |                      | 96                         | 86             | Yes               | 1300.00                       |  |       |  |  |  |  |
| PLEXUS AUDIO<br>SYSTEMS      | Phonon<br>Photon  | MC   | 20-250 $\pm 3$<br>20-185 $\pm 3$                                  | 10<br>1.3         | 0.01<br>0.01            |   | 1.5V              | 1           | 0           | No<br>No                   |                | 140                | 50<br>90             | 94<br>94                   |                | No<br>Yes         | 795.00                        |  |       |  |  |  |  |
| PRIMARE<br>SYSTEMS           | Series<br>928(RI)   |  | 10-1M $\pm 0.3$   | 20                | 0.001                   | 0   | 100               | 1           | 0           | No                         | Adj.           |                    | 100                  | 76                         | 67             | Yes               | 5500.00                       |  |       |  |  |  |  |
| PROTON                       | AP-1000<br>1100   |  | 20-20 $\pm 0.2$<br>20-20 $\pm 2$                                  | 21<br>18          | 0.003<br>0.003          |   | 150<br>150        | 2<br>2      | 3<br>2      | No<br>No                   | 2.5<br>2.5     | 250<br>290         | Sel.<br>Sel.         | 91<br>94                   | 70<br>79       | Yes<br>Yes        | 399.00<br>259.00              |  |       |  |  |  |  |
| PS AUDIO                     | PS 4.6<br>PS 5.5  |  | 5-100 $\pm 0.2$<br>5-100 $\pm 0.2$                                | 18<br>18          | 0.001<br>0.001          |   | 1V<br>1V          | 1<br>1      | 0<br>0      | No<br>No                   |                | 150<br>150         | 150<br>150           | 80<br>80                   | 70<br>70       | Yes<br>Yes        | 699.00<br>1195.00             | External power supply.<br>As above.  |       |  |  |  |  |
| PSE                          | Studio SL<br><br>Studio<br>SL-Line<br>Fulcrum                             | H  | 5-100<br>$\pm 0.05$<br>5-100<br>$\pm 0.05$<br>5-100<br>$\pm 0.05$ | 12<br>12<br>12    | 0.005<br>0.005<br>0.005 | 0<br>0<br>I/O                             | 250<br>250<br>250 | 1<br>1<br>1 | 1<br>1<br>1 | Sel.<br>Sel.<br>Sel.       |                | 200<br>200<br>200  | 220<br>220<br>220    | 80<br>80<br>80             | 78<br>78<br>78 | Yes<br>Yes<br>Yes | 750.00<br>650.00<br>150.00    | Two-bay modular (phono stage,<br>\$400.00; balance, \$300.00; mike,<br>\$800.00).  |       |  |  |  |  |
| QUAD                         | 34<br>66<br>44  |  | 20-20 $\pm 0.5$<br>20-20 $\pm 0.5$<br>20-20 $\pm 0.5$             | 0.5<br>0.5<br>†   | 0.05<br>0.05<br>0.05    |   | 300<br>300<br>300 | 1<br>1<br>2 | 5<br>6<br>6 | No<br>No<br>No             | 3<br>3<br>3    | 150<br>150<br>150  | 180<br>180<br>180    | 75<br>82<br>82             | 72<br>74<br>75 | Yes<br>Yes<br>Yes | 799.00<br>1499.00<br>999.00   | †Selectable.   |       |  |  |  |  |
| QUICKSILVER<br>AUDIO         | Preamp<br>Moving Coil<br>Transformer                                      | T<br>MC  | 1-650 $\pm 0.3$<br>1-100  | 65<br>2.8         | 0.001                   |   |                   | 1           | 0           | No<br>No                   | 5              | 750                |                      |                            |                | Yes               | 1495.00<br>335.00             | 12.5-ohm output impedance.<br>23-dB fixed gain; for cartridges of<br>0.5 to 40 ohms.   |       |  |  |  |  |
| RADFORD                      | SC-25   | T  | 20-100 $\pm 0.3$  | 25                | 0.1                     |   | 100               | 1           | 0           | No                         | 1              | 100                | 100                  | 85                         | 65             | Yes               | 1695.00                       | Separate gain and volume controls.   |       |  |  |  |  |
| REVOX                        | B252(RO)  |  | 20-20 $\pm 0.02$  | 15                | 0.01                    | No  | 160               | 2           | 2           | No                         | Adj.           | 23                 | Adj.                 | 75                         | 75             | Opt.              | 1750.00                       |  |       |  |  |  |  |
| ROCKFORD<br>FOSGATE          | RF-200  |  | 20-20 $\pm 0.4$   | 9.3               | 0.005                   |   | 60                | 2           | 2           | No                         | 0.6            | 75                 | 150                  | 83                         |                | No                |                               | Internal crossover.  |       |  |  |  |  |
| ROTEL                        | RC850<br>RC870BX  | T<br>T   | 20-20 $\pm 0.2$<br>20-20 $\pm 0.2$                                | 10<br>12          | 0.004<br>0.004          |   | 150<br>150        | 2<br>2      | 2<br>0      | No<br>No                   | 2.5<br>2.5     | 180<br>180         |                      | 80<br>80                   | 70<br>70       | Yes<br>Yes        | 249.00<br>399.00              | CD direct input.   |       |  |  |  |  |
| JEFF ROWLAND<br>DESIGN GROUP | Coherence<br>One<br>Series II<br>Consonance<br>(RO)<br>Consummate<br>(RI) |  | 0.2-500 $\pm 0.3$<br>0.2-500 $\pm 0.3$<br>0.2-500 $\pm 0.3$       | 15<br>15<br>15    | 0.01<br>0.015<br>0.008  | 0<br>0<br>I/O                             | 125<br>125<br>125 | 1<br>1<br>1 | 0<br>0<br>0 | Sel.<br>Sel.<br>Sel.       | 5<br>5<br>Sel. | 170<br>170<br>Sel. | Sel.<br>Sel.<br>Sel. | 88<br>85<br>84             | 85<br>84<br>84 | Yes<br>Yes<br>Yes | 4600.00<br>2500.00<br>5500.00 | External power supply.<br>Microprocessor-controlled switching<br>and volume.<br>As above; external power supply.   |       |  |  |  |  |
| SAE                          | P102<br>PT102(RI)   |  | 20-20 $\pm 0.5$<br>20-20 $\pm 0.5$                                | 7.5<br>7.5        | 0.01<br>0.01            |   | 150<br>150        | 3<br>3      | 2<br>2      | No<br>No                   | 1.3            | 120                | 200                  | 82                         | 75             | Yes               | 449.00                        | Two pairs of main outputs; three<br>programmable tone memories.  |       |  |  |  |  |
| SANSUI                       | Vintage<br>C-2102<br>C-1000   |  | 0-300 $\pm 0.3$<br>10-100   | 15<br>6           | 0.003<br>0.03           |   | 150<br>150        | 3<br>3      | †<br>4      |                            | 2.5<br>2.5     | 300<br>120         |                      | 88<br>75                   | 70<br>No       | Yes<br>No         | 750.00<br>190.00              | †Two-band parametric EQ.   |       |  |  |  |  |
| SESCOM                       | PO-11   |  | 20-20   | 2                 | 0.01                    |   | 200               | 0           | 0           | No                         | 1.7            | 100                | 250                  | 69                         |                | No                | 57.20                         | Requires PO-1 power supply,<br>\$71.40.  |       |  |  |  |  |
| SHERWOOD                     | AP-7020   | H  | 5-100 $\pm 0.5, \pm 3$  | 10                | 0.005                   | I/O                                       | 150               | 3           | 2           |                            | 1.25           | 330                | 250                  | 80                         | 75             | Yes               | 329.95                        | Direct switch; selectable subwoofer<br>crossover frequency.  |       |  |  |  |  |
| SHURE                        | M64A  |  | 40-15 $\pm 2$   | 6                 | 1                       |   |                   | 0           | 0           | No                         | 9.4            | 100                | 160                  | 65†                        |                | No                | 102.00                        | †Unweighted.   |       |  |  |  |  |
| SIMA                         | P-2001 MKII   |  | 30-20 $\pm 0.3$   | 11                | 0.05                    |   | 200               | 2           |             | No                         | 1              | 110                | 100                  | 80                         | 66             | Yes               | 695.00                        | Direct inputs.   |       |  |  |  |  |
| SONOGRAPHE                   | SC-1  |  | 5-100   | 7.5               | 0.05                    |   |                   | 2           |             | No                         |                | 150                |                      |                            |                | Yes               | 695.00                        |  |       |  |  |  |  |
| SONTEC                       | PPP-102   |  | 1-400 $\pm 1$   | 15                | 0.003                   |   |                   | 0           | 0           | No                         | Var.           | 150                | Var.                 | 88                         | 68             | Yes               | 825.00                        | Input stage gain-adjustable to<br>match MM or MC cartridges.   |       |  |  |  |  |
| SONY ES                      | TA-E1000-<br>ESQ(RI)  | D  | 3-100 $\pm 0.3$   | 1.5               | 0.004                   |   | 150               | †           | ††          |                            | 2              | 150                | 200                  | 84                         |                | No                | 1000.00                       | Digital preamp/surround processor<br>(see also "Ambience & Surround<br>Sound Processors"). †8 analog,<br>3 digital. †† Digital parametric<br>EQ. Digital inputs and outputs;<br>Dolby Pro Logic. |       |  |  |  |  |





If you've vowed not to compromise this time around, consider the rich rewards of owning Carver. Each component includes unique innovations designed to confront and solve real-world sonic problems.

**Power unleashed: Simultaneous high current/high voltage output.** The TFM-25 is capable of delivering more simultaneous current, power and voltage into a wider range of speaker loads than any other competitively priced design: **225 watts per channel into 8 ohms 20-20kHz with no more than 0.5% THD.** Its patented Magnetic Field Power Supply can draw up to 200% more line current, store more joules of energy in its unique distributed capacitance system, and then deliver up to 500% more current during musical peaks. With the right speakers, this kind of serious power can achieve a full restoration of the robust percussive attacks and lightning transients so

necessary to achieving musical realism from digital sources.

**Accuracy and musicality through Transfer Function Modification.** Over the past two decades, Bob Carver has worked on the problem of replicating one power amplifier's sonic signature in another dissimilar design. Through thousands of hours of painstaking tests and modifications, he has been able to closely match the TFM-25's transfer function with that of his highly acclaimed \$17,500.00 Silver Seven vacuum tube reference power amplifier. When you hear the warm, natural sound of the TFM-25, you'll know that Transfer Function Modification is an audible reality.

**New flexibility in a classic preamplifier design.** The Carver C-16 is at once a purist, "straight-wire-with-gain" design and a wonderful wealth of sonic options. Including individual left/right tone controls with variable

POWERFUL

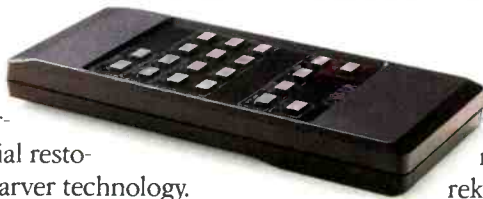
MUSICAL

ACCURATE

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turnover, full-band Spectral Tilt, and of course Sonic Holography® with a new Blend control that further extends the remarkable spacial restoration abilities of this exclusive Carver technology.

ACCD turns "dirty" FM into fresh air. Unlike any competitive tuner model, the Carver TX-12 can actually transform a noisy, multipath distortion-ravaged FM signal into clean, hiss-free music with full stereo separation. The key is the TX-12's Asymmetrical Charge-Coupled FM Detection circuitry. A lengthy name for a wonderfully fast solution to expanding your listening possibilities. When you experience ACCD's effect, you may consider the TX-12's full remote control, 20 FM/AM presets with pre-view scan, stereo/mono switch and dual antenna inputs, mere icing on the cake.



Hear why we stack up ahead of the competition. The TFM-25, C-16 and TX-12 are just three of over a dozen new Carver designs. Each is designed to rekindle your sense of musical wonder. It all begins with a visit to your nearest Carver dealer.

*To receive White Papers on Simultaneous High Current High Voltage Transfer Function Modification and Sonic Holography®, details of Spectral Tilt and the name of your nearest Carver Dealer, call 1-800-443-CAVR, 8-5 PM Pacific time.*

## CARVER

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MASTERS GENERATION II have been computer optimized to give the flattest linear phase possible in each model and, also, a flat volume response of the speaker to reproduce, in each room, concert ambience and characteristics.

Special care has been given to pulse response, even off axis to maintain 3 dimensional imaging.

This has been achieved by using a 100% carbone woven speaker with direct coupling (MM and M1) or slow rate crossover (M3 and M5) and accurate low resonance tweeters to control crossover phasing.

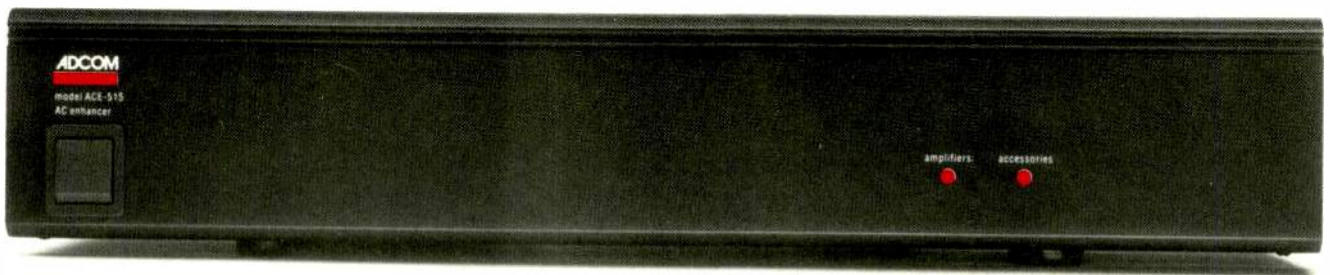
These speakers use bi wiring techniques and will permit a bi amplification process.

All units are mirrored speaker in order to keep optimum stereo imaging.

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# “Line protection - you can pay a little for it now, or you can pay a lot for it later.”

—Ken Pohlman, *AUDIO*,  
November 1987.



Regardless of how sophisticated your stereo and video system is, it may never achieve its full potential if plugged directly into an AC outlet. Raw and unprocessed AC power can severely diminish the clarity of audio signals and reduce the resolution of your video picture. Harmful high-voltage spikes and surges can also damage your valuable equipment.

The ADCOM ACE-515 AC Enhancer significantly improves the performance capabilities of your system by filtering and processing raw AC power, unveiling a pure, noise-free power source. And, it protects your components from harmful line voltage disturbances.

## Listen To The Critics

*“Electronic equipment (especially digital audio gear) is vulnerable to both annoying and catastrophic power-line problems. Your stereo gear should have line spike and surge protection, with hash filters thrown in too.”*

—Ken Pohlman, *AUDIO*, November 1987.

*“...the effective suppression of AC ‘RF hash’ by the ACE-515 improved clarity and lowered noise in all three CD players...the significant improvements in instrumental and vocal harmonic retrieval and hall ambience are superb...it simply appears to allow musical information to be passed through to the listener with less veil and electronic ‘haze.’”*

—Lewis Lipnick, *Stereophile*, Vol. 11 No. 4, April 1988.

Recommended accessory in *Stereophile*, Vol. 12 No. 4, April 1989.

For a modest investment, the ADCOM ACE-515 enhances both audio and video clarity while protecting your equipment. Once again, ADCOM lives up to its reputation of offering superior performance at a reasonable cost. For complete technical data, please visit your Adcom dealer. You’ll discover the ACE-515 is more than an accessory.

It’s a necessity.

**ADCOM**<sup>®</sup>  
details you can hear



# PREAMPLIFIERS

| MANUFACTURER       | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional | Type: T=Tube; H=Hybrid; M=Mono; D=Digital; D=0;<br>Moving Coil Stage Only=MC; Phono Stage Only=P | Frequency Response,<br>Hz to kHz, $\pm$ dB | Maximum Output, V | THD, %        | PHONO STAGE                               |                            |                                     |                         |                            |  |                       |                                |                                       |                    | Price, \$         | Notes   |  |
|--------------------|--|--|--|-------------------|---------------|---|----------------------------|-------------------------------------|-------------------------|----------------------------|--|-----------------------|--------------------------------|---------------------------------------|--------------------|-------------------|---|--|
|                    |  |  |  |                   |               | Balanced Inputs = I, Balanced Outputs = O | High-Level Sensitivity, mV | Number of Tape & Processor Controls | Number of Tone Controls | Does Unit Invert Polarity? | MM Phono Sensitivity mV<br>for 0.5 V Output at 1 kHz | MM Phono Overload, mV | MM Phono Input Capacitance, pF | MC Phono S.N. - dB, "A" Wtd. re: 5 mV | Moving Coil Input? |                   |   |  |
| SOUND-CRAFTSMEN    | Pro-PT Two   |  | 10-100 $\pm$ 0.5                           | 8                 | 0.008         |   | 150                        | 2                                   | 2                       | No                         | 2.5  | 200                   | 200                            | 80                                    |                    | 449.00            | Tuner/preamp (see also "Tuners");   |  |
|                    | DX4200   |  | 5-100 $\pm$ 0.25                           | 10                | 0.01          |   | 90                         | 4                                   | 10                      | No                         | Adj.   | 300                   | Adj.                           | 97                                    |                    | 749.00            | C-MDS switching.  |  |
|                    | DX4000   |  | 5-100 $\pm$ 0.25                           | 10                | 0.01          |   | 90                         | 5                                   | 0                       | No                         | 2.8  | 200                   | 100                            | 97                                    |                    | 439.00            | Preamp/EQ; bridging outputs.  |  |
|                    | DX3000-17  |  | 10-100 $\pm$ 0.5                           | 8                 | 0.008         |   | 150                        | 2                                   | 2                       | No                         | 2.5  | 200                   | 200                            | 80                                    |                    | 279.00            | C-MDS switching.  |  |
|                    | Pro-PT 5R (RI)   |  | 10-100 $\pm$ 0.5                           | 8                 | 0.008         |   | 150                        | 2                                   | 2                       | No                         | 2.5  | 200                   | 200                            | 80                                    |                    | 599.00            | Tuner/preamp (see also "Tuners");<br>C-MDS switching; dynamic compansion.   |  |
| SOUND ENGINEERING  | PFM-2<br>PFM-0   | MC   | 1-50 + 0.0-0.5<br>5-100 + 0.0-0.1          | 17<br>3           | 0.01<br>0.06  | D   | Sel.                       | 1                                   | 0                       | Sel.<br>No                 | Sel.   | 450                   | 100                            | 94                                    | No<br>Yes          | 1550.00<br>850.00 |   |  |
| SOUNDSTREAM        | C-1(RI)  |  | 5-75                                       | 8.5               | 0.05          | D   | 75                         | 4                                   | 2                       | No                         |  |                       |                                |                                       |                    | 1495.00           | Three optional phono cards; direct<br>video switching; optional multi-<br>room switching; dual mono.  |  |
| SOUNDWAVE FIDELITY | Symphony<br>1A   |  | 20-100 $\pm$ 3                             | 9                 | 0.01          |   |                            | 1                                   | 1                       | No                         | 10   | 180                   |                                | 86                                    | No                 | 795.00            | Selectable low-frequency<br>equalization.   |  |
| SPECTRAL AUDIO     | DMC-10<br>Series Delta                                     |  | 0-1M $\pm$ 0.1                             | 40                | 0.01          |   | 100                        | 1                                   |                         | No                         | 1.5  | 1.2V                  | Sel.                           | 95                                    | 78                 | Yes               | 3495.00   | External power supply.   |
|                    | DMC-6<br>Series II   |  | 0-1M $\pm$ 0.1                             | 40                | 0.01          |   | 100                        | 1                                   |                         | No                         | 1.5  | 1.2V                  | Sel.                           | 95                                    | 76                 | Yes               | 2495.00   | As above.  |
| SPECTRASCAN        | LCA-10 MC  |  | 3-250 + 0.3                                | 15                | 0.05          |   | 100                        | 2                                   | 0                       | No                         | 1.0  | 150                   | Var.                           | 85                                    | 78                 | Yes               | 1969.00   | Selectable input impedance.  |
| STANTON            | 310B   | P  | 20-20                                      | 15                | 0.05          |   |                            |                                     |                         |                            | 0.5  | 120                   | Adj.                           | 74                                    | No                 | 280.00            |   |  |
| J. E. SUGDEN       | C28  |  | 20-20 + 0.0-0.7                            | 15                | 0.002         | I   | 215                        | 3                                   | 0                       | No                         | 2.0  | 200                   |                                | 72                                    | 65                 | Yes               | 650.00  | Includes SPX1A power supply.<br><br>Includes AV51P power supply.       |
|                    | C128/<br>SPX1A   |  |  | 13                | 0.003         | I   | Sel.                       | 3                                   | 0                       | No                         | 2.0  | 200                   |                                | 72                                    | 65                 | Yes               | 1690.00   |  |
|                    | AV51C/<br>AV51P  |  |  | 15                | 0.001         | I   | Sel.                       | 3                                   | 0                       | No                         | 2.0  | 225                   |                                | 80                                    | 74                 | Yes               | 3250.00   |  |
| SUMD               | Athena   |  | 1.5-500<br>+ 0.1-5                         | 20                | 0.001         | No  | 300                        | 2                                   | 0                       | No                         | 0.37   | 160                   | 100                            | 85                                    | 80                 | Yes               | 729.00  | High-level bypass; Class A; high-<br>current design.                   |
| SUPERPHON          | Revelation<br>II G   |  | 2-175                                      | 5                 |               |   |                            | 2                                   | 0                       | No                         |  | 150                   |                                |                                       | No                 | 799.00            | Active and passive, selectable.   |  |
|                    | C.D. Maxx  |  | 2-200                                      | 3                 |               |   |                            | 1                                   | 0                       | No                         |  |                       |                                |                                       |                    | 399.00            |   |  |
| TANDBERG           | TCA-3018A<br>TCA-3038A                                     |  | 20-20 + 0.0-0.1<br>20-20 + 0.0-0.5         | 20<br>6           | 0.009<br>0.04 |   | 80<br>70                   | 2<br>2                              | 0<br>3                  | No<br>No                   | 1<br>0.5   | 290<br>70             | Sel.<br>100                    | 78<br>75                              | 74<br>70           | Yes<br>Yes        |   |  |
| TECHNICS           | SU-A200  |  | 0.05-180<br>+ 0.3                          | 8                 | 0.001         |   | 36                         | 4                                   | 0                       |                            | 0.63   | 150                   |                                | 80                                    | 77                 | Yes               | 1199.00   |  |
|                    | SU-A6MK2   |  | 0.5-200 + 0.3                              | 8                 | 0.002         |   | 36                         | 3                                   | 4                       |                            | 0.63   | 150                   |                                | 80                                    | 77                 | Yes               | 799.00  |  |
|                    | SU-A40   |  | 0.8-150<br>+ 0.0-0.1                       |                   | 0.009         |   | 75                         | 3                                   | 2                       |                            | 1.25   | 150                   |                                | 79                                    | 74                 | Yes               | 329.00  |  |
| THETA DIGITAL      | DS Pre   | D  | 0-20 + 0.0-0.01                            | 3.8               | 0.002         |   |                            | 1                                   | 0                       | Sel.                       |  |                       |                                |                                       |                    | 4000.00           | Preamp with D/A conversion (see<br>"CD Players & D/A Converters");<br>includes switching, volume control,<br>and other preamp functions; digital<br>inputs and outputs. |  |
|                    | DS Pre basic   | D  | 0-20 + 0.0-0.01                            | 3.8               | 0.004         |   |                            | 1                                   | 0                       | Sel.                       |  |                       |                                |                                       |                    | 2395.00           | As above.   |  |
|                    | Analog<br>Extension  |  | 0-20 + 0.0-0.01                            | 9                 | 0.002         |   | 100                        | 2                                   | 0                       | No                         |  |                       |                                |                                       |                    | 995.00            | Active analog switcher for above<br>models; optional phono card.  |  |
| THRESHOLD          | FET ten/hi   |  | 1.5-125                                    | 20                | 0.01          |   | 200                        | 2                                   | 0                       | No                         |  |                       |                                | 90                                    | 79                 | Yes               | 2500.00   | External power supply.<br>As above.                                    |
|                    | FET ten/pc<br>FET nine                                     | P  | R1AA, $\pm$ 0.25<br>1.5-125                | 20<br>20          | 0.01<br>0.02  |   | 200                        | 2                                   | 0                       | No<br>No                   | 5<br>5   | 100<br>100            | Sel.<br>Sel.                   | 85<br>85                              | 74<br>74           | Yes<br>Yes        | 1650.00<br>1950.00  |  |
| VENDETTA RESEARCH  | SCP 2A   | MC   | 0.1-1M                                     | 3                 | 0.01          |   |                            |                                     |                         | Yes                        |  |                       |                                | 90                                    | Yes                | 2250.00           | Variable MC impedance.  |  |
| VTL                | Maximal  | T  |  |                   |               |   |                            | 0                                   | 0                       | No                         |  | 120                   |                                | No                                    |                    | 775.00            | MC-only version, \$1350.00.<br><br>With balanced inputs and MM/MC<br>stage, \$3950.00.<br>External tube power supply.   |  |
|                    | De Luxe  | T  |  |                   |               |   |                            | 0                                   | 0                       | No                         |  | 120                   |                                | No                                    |                    | 1050.00           |   |  |
|                    | Super  | T/MC   |  |                   |               |   |                            | 0                                   | 0                       | No                         |  |                       |                                | No                                    |                    | 2250.00           |   |  |
|                    | De Luxe  | T  |  |                   |               |   |                            | 0                                   | 0                       | No                         |  | 120                   |                                | Yes                                   |                    | 3050.00           |   |  |
|                    | Ultimate   |  |  |                   |               |   |                            | 0                                   | 0                       | No                         |  |                       |                                |                                       |                    |                   |   |  |
|                    | Manley<br>Reference  |  |  |                   |               | I   |                            | 0                                   | 0                       | No                         |  |                       |                                |                                       |                    | 5500.00           |   |  |
| WINGATE AUDIO      | 990(RI)  |  | 0.1-250 + 0.3                              | 20                | 0.05          |   | 100                        | 2                                   | 0                       | No                         | 1  | 400                   | 100                            | 100                                   | 80                 | Yes               | 1995.00   | All FET; no negative feedback; video<br>switching.                     |
|                    | 660  |  | 0.1-250 + 0.3                              | 20                | 0.05          |   | 100                        | 2                                   | 0                       | No                         | 1  | 400                   | 100                            | 100                                   | 80                 | Yes               | 1695.00   | All FET; no negative feedback.   |
| YAMAHA             | CX-10000<br>(RI)   | D  | 15-100                                     | 3                 | 0.003         |   | 150                        | 2                                   | †                       |                            |  |                       |                                |                                       |                    | Yes               | 7500.00   | Digital signal processing; digital<br>inputs and outputs. †Digital EQ. |
|                    | HX-10000   | P  | 20-20 $\pm$ 0.2                            | 5                 | 0.001         |   |                            |                                     |                         |                            | 2.5  | 120                   | Sel.                           | 99                                    | 94                 | Yes               | 2500.00   | Digital inputs and outputs.<br>As above.                               |
|                    | CX-6000U(RI)   |  | 20-20 + 0.0-0.2                            |                   | 0.002         |   | 150                        | 1                                   | 3                       |                            | 0.83   | 180                   | Sel.                           | 94                                    | 84                 | Yes               | 449.00  |  |
|                    | CX-2000(RI)  | D  | 20-20 + 0.0-0.2                            |                   | 0.001         |   | 50                         | 3                                   | 3                       | No                         | 0.83   | 190                   | Sel.                           | 95                                    | 91                 | Yes               | 1499.00   |  |
|                    | CX-1000(RI)  | D  | 20-20 + 0.0-0.2                            |                   | 0.001         |   | 50                         | 3                                   | 3                       | No                         | 0.83   | 180                   | Sel.                           | 95                                    | 91                 | Yes               | 1199.00   |  |
|                    | CX-800(RI)   | D  | 20-20 + 0.0-0.2                            |                   | 0.001         |   | 50                         | 3                                   | 3                       | Sel.                       | 0.83   | 170                   | Sel.                           | 95                                    | 90                 | Yes               | 699.00  |  |
| YBA                | YBA1 Pre   |  | 5-400 $\pm$ 0.2                            | 8                 | 0.05          |   | 150                        | 1                                   | 0                       | Sel.                       | 2.0  | 2.2V                  | 250                            | 90                                    | 90                 | Yes               | 5500.00   | Dual mono; external power supply.                                      |
|                    | YBA2 Pre   |  | 5-400 $\pm$ 0.2                            | 8                 | 0.05          |   | 150                        | 1                                   | 0                       | No                         | 2.0  | 2.2V                  | 250                            | 90                                    | 90                 | Yes               | 3000.00   | As above.  |
|                    | YBA3 Pre   |  | 5-400 $\pm$ 0.2                            | 8                 | 0.05          |   | 150                        | 1                                   | 0                       | No                         | 2.0  | 280                   | 250                            | 83                                    | 84                 | Dpt.              | 1800.00   |  |



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# TUNERS

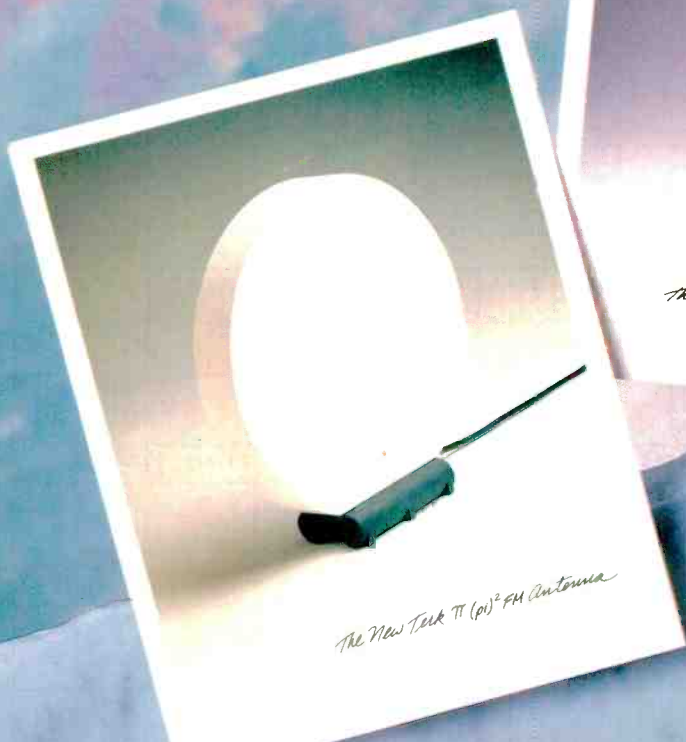
| MANUFACTURER            | Model<br>(R) = Remote Included,<br>(RO) = Remote Optional             | FM Only = F              | AM Stereo Capable?          | HF (Usable) Sensitivity, dBm,<br>Mono-Stereo     | Signal Strength for<br>50 dB Quieting, dB        | Capture Ratio, dB, Mono-Stereo | AM Suppression, dB   | Alternate Channel Selectivity, dB,<br>Wide/Narrow | Total Number of Station Presets | Separation at 1 kHz, dB | THD at 1 kHz, % Mono-Stereo,<br>100% Modulation  | THD at 6 kHz, % Mono-Stereo,<br>100% Modulation | Maximum S/N, - dB, Mono-Stereo   | Weight, Lbs.                     | Price, \$                             |
|-------------------------|---|--------------------------|-----------------------------|--|--|--------------------------------|----------------------|---|---------------------------------|-------------------------|--|---|----------------------------------|----------------------------------|---------------------------------------|
| ACCUAPHASE              | T-106<br>T-107  | D<br>F/D                 | No<br>No                    | 11/29<br>11/29                                   | 17/37<br>17/37                                   | 1.5/<br>1.5/                   | 80<br>80             | 70/100<br>70/100                                  | 12<br>12                        | 50<br>50                | 0.04/0.08<br>0.04/0.08                           | 0.04/0.08<br>0.04/0.08                          | 83/79<br>90/85                   | 28.6<br>21.6                     | 2750.00<br>1800.00                    |
| ADCOM                   | GFT-555II<br>GTP-500II(RI)<br>Tuner/Preamp<br>GTP-400<br>Tuner/Preamp | D<br>D<br>D              | No<br>No<br>No              | 11.2/<br>12.2/<br>12.5/                          | 13.2/35.0<br>14/36<br>15/36.5                    | 1.5<br>1.7<br>1.8              | 65<br>63<br>60       | 76<br>75<br>75                                    | 16<br>16<br>16                  | 60<br>55<br>50          | 0.065/0.05<br>0.07/0.09<br>0.08/0.09             |   | 86/78<br>80/75<br>78/75          | 14<br>15<br>15                   | 299.95<br>599.95<br>349.95            |
| AR                      | T-06<br>T-06R(RO)   | D<br>D                   | No<br>No                    | 11.2/<br>11.2/                                   | 14.6/37.2<br>14.6/37.2                           | 1.0<br>1.0                     | 60<br>60             | 70<br>70  | 16<br>16                        | 48<br>48                | 0.08/0.2<br>0.08/0.2                             | 0.08/0.3  | 80/75<br>80/75                   | 13.3<br>13.3                     | 329.90<br>399.90                      |
| ARAGON                  | 4T2   |                          | No                          | 10.8/  | 37.6   | 1.0                            | 80                   | 66  | 16                              | 50                      | /0.09  | /0.12   | 75                               | 15                               | 599.00                                |
| ARCAM                   | Delta 80<br>Alpha 2   |                          | No<br>No                    | 14.2/<br>14.2/                                   |  | 1.5<br>1.5                     | 50<br>50             | 60<br>60  | 12<br>0                         | 40<br>40                | 0.15/0.25<br>0.15/0.25                           |   | 74/70<br>70/68                   | 6.6<br>5.7                       | 599.95<br>329.95                      |
| ARISTON                 | Encore<br>Tuner(RI)   | F                        | No                          |  |  | 1.3                            | 67                   | 60  | 8                               | 45                      | 0.1/0.15   | 0.15/0.2  | 80/75                            | 6                                | 379.00                                |
| A + T                   | T-1000AC(RI)  |                          | No                          |  |  |                                | 62                   |   |                                 | 70                      |  |   |                                  | 15                               | 1200.00                               |
| AUDIO DESIGN ASSOCIATES | FM-600  | F                        | No                          | 8/14.5   | 13/34  | 1.4                            | 55                   | 80  | 6                               | 47                      | 0.15/0.2   |   | 74/69                            | 12                               | 2395.00                               |
| AUDIO DYNAMICS          | T-2000E(RO)   | D                        | No                          | 11.2/22  | 16.2/40  | 1.5                            | 55                   | 67  | 20                              | 43                      | 0.1/   | 0.2/0.3   | 75/70                            |                                  | 349.00                                |
| AUDIOLAB                | 8000T   |                          | No                          |  |  |                                |                      |   | 39                              |                         |  |   |                                  |                                  | 699.00                                |
| AUDIOSOURCE             | TNR One   | D                        | No                          | 11.2/20.2  | 20.2/40.2  | 1.0                            | 55                   | 65  | 20                              | 45                      | 0.21/0.3   |   | 70/65                            | 12 3/4                           | 229.95                                |
| A.V.A.                  | FET 3<br>FET 3 Plus<br>Transcendence<br>FET Valve                     | F/D<br>F/D<br>F/D<br>F/D | No<br>No<br>No<br>No        | 11.3/<br>11.3/<br>11.3/<br>11.3/                 | 17.2/37.2<br>17.2/37.2<br>17.2/37.2<br>17.2/37.2 | 1.5<br>1.5<br>1.5<br>1.5       | 60<br>60<br>60<br>60 | 80<br>80<br>80<br>80                              | 5<br>5<br>5<br>5                | 45<br>48<br>52<br>55    | 0.1/0.17<br>0.09/0.12<br>0.07/0.1<br>0.05/0.08   |   | 72/68<br>75/71<br>79/74<br>83/78 | 10<br>10<br>11<br>16             | 525.00<br>625.00<br>825.00<br>1195.00 |
| CARVER                  | TX-12(RI)<br>TX-11b<br>TX-10<br>CT-17(RI)<br>Tuner/Preamp             | D<br>D<br>D<br>D<br>D    | No<br>Yes<br>No<br>No<br>No | 14.5/18.6<br>11.3/16.3<br>16.1/23.5<br>15.5/20.1 |  | 1.45<br>1.0<br>1.6<br>1.4      | 72<br>75<br>72<br>73 | 60<br>35/110<br>58<br>58                          | 20<br>13<br>20<br>20            | 42<br>45<br>42<br>43    | /0.02<br>/0.05<br>/0.2<br>/0.02                  |   | 76<br>82<br>74<br>79             | 10<br>11<br>9<br>16              | 399.95<br>749.95<br>299.95<br>799.95  |
| CREEK                   | T40   | F                        | No                          | 10.0/17.0  | 9.0/32   | 0.4/3.0                        | 50                   | 30/100  |                                 | 35                      | 0.2/0.3  | 0.3/0.4   | 80/70                            | 4                                | 475.00                                |
| CYRUS                   | Cyrus(RI)   | D                        | No                          | 6/12   | 10/28  | 1.5                            | 80                   | 40  |                                 | 59                      | 0.1/0.1  | 0.15/0.2  | 82/76                            | 10                               | 649.00                                |
| DAY SEQUERRA            | FM Broadcast<br>Monitor<br>FM Studio                                  | F<br>F                   |                             |  |  |                                |                      |   |                                 |                         |  |   |                                  | 45<br>32                         | 12,800.<br>3300.00                    |
| DBX                     | TX-3MkII  | D                        | No                          | 9.4/   | 11.2/43.8  | 1.5                            | 70                   | 70  | 16                              | 55                      | 0.06/0.07  | 0.06/0.07                                       | 85/79                            | 10 1/2                           | 599.00                                |
| DENON                   | TU-800<br>TU-550<br>TU-460<br>TU-450                                  | D<br>D<br>D<br>D         | No<br>No<br>No<br>No        | 10.2/<br>10.2/<br>10.3/<br>11.2/                 | 15.3/37.2<br>15.3/37.7<br>15.3/38.5<br>15.9/38.5 | 1.2/<br>1.2/<br>1.5<br>1.5     | 70<br>50<br>50<br>50 | 50/80<br>50/80<br>50<br>60                        | 30<br>20<br>30<br>16            | 60<br>45<br>45<br>40    | 0.02/0.04<br>0.08/0.15<br>0.08/0.15<br>0.08/0.15 |   | 96/88<br>84/78<br>82/78<br>80/76 | 8 3/4<br>6 3/4<br>6 1/2<br>6 1/2 | 500.00<br>300.00<br>240.00<br>225.00  |
| DUAL                    | CT5040  | D                        | No                          | 11/17.2  | 16.5/36  | 2                              | 55                   | 65  | 40                              | 45                      | 0.05/0.15  | 0.05/0.15                                       | 70/                              | 15                               | 249.00                                |
| GOLDMUND                | Mimesis 4(RO)   | F                        | No                          |  |  |                                |                      |   | 6                               | 60                      |  |   | 75/70                            | 22                               | 4490.00                               |
| GRUNDIG                 | T-9000<br>T-903   | D<br>D                   | No<br>No                    | 6.8/38.8<br>11.2/42.1                            | 20/21<br>36.3/39.2                               | 0.05/<br>0.09                  |                      | 65/83<br>70                                       | 29<br>19                        |                         | 0.05/0.10<br>0.2/0.4                             |   | 79/76<br>72/70                   |                                  | 1199.95<br>449.95                     |
| HAFLER                  | SE130<br>DH330<br>Iris(RO)  | F/D<br>F/D               | No<br>No                    | 11.3/<br>11.3/                                   | 15.3/36.5<br>15.3/36.5                           | 1.5<br>1.5                     |                      | 60<br>60  | 5                               | 45<br>45                | 0.1/0.18<br>0.1/0.18                             |   | 72/68<br>72/68                   | 9<br>9                           | 425.00<br>450.00                      |

**T**UNERS TUNE MORE WITH THE TERK Pi<sup>2</sup>



# T

# UNERS TUNE MORE...



*The New Terk II (pi)² FM Antenna*



*The Terk Model 9300 FM Antenna*



*The Terk FM+ Antenna*

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The breakthrough FM antenna designs from Terk Technologies reduce FM noise, improve signal strength, and increase the number and quality of FM stations that you receive.

Now Terk FM antennas feature even greater improvements. The new Reference Standard  $\pi^2$ , featuring a Schotz low-noise amplifier, has an adjustable gain control and offers an unparalleled 33 dB of gain.  $\pi^2$  relies on the highly-acclaimed, patented Gamma Loop element for exceptional directional and omnidirectional reception, as well as superior multipath and noise rejection. Find out why Audic Magazine reviewer Len Feldman commented, "A truly amazing product."

Another outstanding innovation is the compact Terk FM+ antenna, based on the same Gamma Loop technology and offering the greatest signal improvements for the

least investment. You may also choose the Terk Classic Tower Model 9300 utilizing an adjustable gain that lets you correct for weak or strong stations.

Even today's high-performance receivers and tuners need extra help. Hear just how good your receiver or tuner can sound.

# TERK

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# TUNERS

| MANUFACTURER              | Model<br>(R) = Remote Included,<br>(RD) = Remote Optional  | FM Only = F                          | Digitally Synthesized = D                    | AM Stereo Capable? | IHF (Usable) Sensitivity, dBf,<br>Mono Stereo  | Signal Strength for<br>50dB Quieting, dBf, Mono/Stereo   | Capture Ratio, dB, Wide/Narrow                       | AM Suppression, dB | Alternate Channel Selectivity, dB,<br>Wide/Narrow | Total Number of Station Presets  | Separation at 1 kHz, dB          | THD at 1 kHz, %, Mono/Stereo,<br>100% Modulation | THD at 6 kHz, %, Mono/Stereo,<br>100% Modulation | Maximum S/N, -dB, Mono/Stereo             | Weight, Lbs.                      | Price, \$  |
|---------------------------|--|--------------------------------------|--|--------------------|--|--|--|--------------------|---|----------------------------------|----------------------------------|--|--|---|-----------------------------------|--|
| HARMAN KARDON             | TU909<br>TU911A<br>TU920   |                                      |  |                    | 11.2/<br>10.8/<br>10.8/  | /38.2<br>/37<br>/37  | 1.5<br>1.3<br>1.3/2.0                                | 45<br>45<br>45     | 70<br>60<br>60/75                                 | 18<br>16<br>16                   | 45<br>50<br>50                   | 0.1/0.12<br>0.1/0.12<br>0.1/0.15                 |  | 80/72<br>82/74<br>82/74                   | 10<br>10<br>10                    | 199.00<br>299.00<br>399.00                               |
| HARMAN KARDON<br>CITATION | twenty-three   | D                                    |  |                    | 10.8/  | /36.5  | 0.75/1.75  | 45                 | 65/75   | 16                               | 55                               | 0.06/0.08  |  | 84/75                                     | 15                                | 699.00   |
| JVC                       | FX555BK<br>FX1100BK<br>FX1010TN  | D<br>D<br>D                          | No<br>No<br>No                               |                    | 10.8/<br>10.3/<br>10.3/  | 16.3/38.3<br>14.8/35.1<br>14.8/38.1  | 1.5<br>1.2/<br>1.2/                                  | 60<br>65<br>65     | 60<br>25/75<br>25/75                              | 40<br>40<br>40                   | 40<br>60<br>60                   | 0.09/0.12<br>0.009/<br>0.009/                    |  | 82/75<br>94/88<br>94/88                   | 7.5<br>8.2<br>8.2                 | 240.00<br>470.00<br>470.00                               |
| KENWOOD                   | KT-990D<br>KT-880D<br>KT-88  |                                      | No<br>No<br>No                               |                    | 10.8/<br>10.8/<br>10.8/  | 16.2/38.8<br>16.2/38.8<br>18.2/41.2  | 1.0/2.5<br>1.0/2.5<br>1.2                            | 76<br>76<br>75     | 60/90<br>60/90<br>50                              | 20<br>20<br>20                   | 65<br>55<br>40                   | 0.007/0.009<br>0.04/0.06<br>0.3/0.3              | 0.2/0.1<br>0.1/0.12<br>0.5/0.7                   | 92/86<br>88/83<br>78/75                   | 8 3/4<br>7 3/4<br>6 3/4           | 375.00<br>269.00<br>169.00                               |
| KINERGETICS<br>RESEARCH   | KBT-1  | D                                    | No   |                    | 9.0/11.2   | 13.5/36.0  | 1.5/1.5  | 60                 | 50/70   | 10                               | 40                               | 0.02/0.05  | 0.02/0.05  | 75/73                                     | 13 1/2                            | 995.00   |
| KLIMO                     | Ertanax<br>(Tube Unit)   |                                      |  |                    |  |  |  |                    |   |                                  |                                  | 0.2/0.3  |  |   | 23                                | 9500.00  |
| LUXMAN                    | T111<br>T117<br>TP117  |                                      | No<br>No<br>No                               |                    | 10.8/<br>8.8/<br>10.8/   | 19/38<br>16/36<br>14.8/38  | 1.3<br>1.5/<br>1.5                                   | 68<br>70<br>69     | 60<br>45/80<br>58                                 | 20<br>24<br>20                   | 50<br>55<br>48                   | 0.15/0.20<br>0.05/0.06<br>0.1/0.15               |  | 75/70<br>88/78<br>78/72                   | 5.1<br>9.9<br>11.4                | 300.00<br>600.00<br>1250.00                              |
| MADISON FIELDING          | DT100II(RD)  | F/D                                  | No   |                    | 10.2/11.2  | 13.2/34.0  | 1.5/1.5  | 60                 | 50/83   | 8                                | 60                               | 0.10/0.20  | 0.10/0.22  | 75/73                                     | 10                                | 1150.00  |
| MAGNUM OYNALAB            | FT-11<br>FT-101(RD)<br>Etude(RD)   | F<br>F<br>F                          | No<br>No<br>No                               |                    | 12.1/<br>10.3/11.2<br>10.3/11.2  | /35.3<br>13.2/34.0<br>13.2/34.0  | 1.5/1.5<br>1.5/1.5<br>1.5/1.5                        | 70<br>70<br>70     | 50/<br>55/75<br>70/80                             | 3<br>0<br>0                      | 50<br>60<br>60                   | 0.13/0.30<br>0.10/0.18<br>0.10/0.18              |  | 70/<br>75/<br>80/                         | 12<br>14<br>16                    | 449.00<br>698.00<br>1200.00                              |
| MARANTZ                   | ST54<br>ST35   | D<br>D                               | No<br>No                                     |                    |  |  |  |                    |   | 24<br>24                         |                                  |  |  |   |                                   | 420.00<br>300.00   |
| McINTOSH                  | MR7082   |                                      |  |                    | 12.6/  | 17.6/37.2  | 1.5  | 60                 | 55  | 7                                |                                  | 0.08/0.08  | 0.08/0.08  | 80/75                                     | 15                                | 1499.00  |
| MERIDIAN                  | 204(RD)  | F                                    | No   |                    |  | 14.7/38.4  | 1.5  | 55                 | 56  | 18                               | 40                               | 0.2/0.4  |  | 71/68                                     | 10 1/2                            | 1090.00  |
| NAD                       | 4225<br>4300<br>1700(RI)<br>Tuner Preamp   | D<br>D<br>D<br>D                     | No<br>No<br>No<br>No                         |                    | 10.8/<br>9.0/<br>10.3/   | 14.4/37<br>12/34<br>13/35  | 1.5<br>1.5/2.5<br>1.5/2.5                            | 65<br>70<br>65     | 65<br>80/100<br>80/90                             | 14<br>16<br>14                   | 45<br>50<br>50                   | 0.09/0.09<br>0.07/0.07<br>0.08/0.08              | 0.2/0.30<br>0.15/0.35<br>0.20/0.30               | 80/75<br>85/80<br>80/75                   | 3.2<br>10.4<br>14.5               | 249.00<br>499.00<br>799.00                               |
| NAIM AUDIO                | NAT 01<br>NAT 02   | F<br>F                               | No<br>No                                     |                    |  |  |  |                    |   | 0<br>0                           |                                  |  |  |   | 24<br>12                          | 2995.00<br>1675.00                                       |
| NAKAMICHI                 | ST-7<br>(w/Scholz NR)  | D                                    |  |                    | 10.0/17.0  | 14/28  | 1.9  | 60                 | 60  | 16                               | 55                               | 0.06/0.08  |  | 80/76                                     | 10 3/8                            | 795.00   |
| NIKKO                     | G-400<br>T-400   | D<br>D                               | No<br>No                                     |                    | 9.2/<br>9.2/   | 13.5/38.2<br>13.5/38.2   | 1.0/2.0<br>1.0/2.0                                   | 70<br>70           | 40/80<br>40/80                                    | 10<br>10                         | 65<br>65                         | 0.03/0.05<br>0.03/0.05                           |  | 86/79<br>86/79                            | 9 1/4<br>9 1/4                    | 439.95<br>419.95   |
| ONIX AUDIO                | BWD1   | F                                    | No   |                    | 7.5/   | 9.1/32.3   | 0.5/2.9  | 65                 | 30/100  |                                  | 70                               | 0.03/0.04  | 0.03/0.1   | 90/91                                     | 6                                 | 885.00   |
| ONKYO                     | T-4000<br>Integra<br>T-4500<br>Integra<br>T-4087<br>Integra<br>T-4700(RI)<br>Integra<br>T-9090MKII<br>(RI)<br>Grand Integra<br>T-G10(RI) | D<br>D<br>D<br>D<br>D<br>D<br>F<br>F | No<br>No<br>No<br>No<br>No<br>No<br>No<br>No |                    | 11.2/17.2<br>10.3/17.2<br>10.3/17.2<br>10.3/17.2<br>10.3/17.2<br>10.3/17.2<br>10.3/17.2<br>10.3/17.2 | 16.1/36.1<br>16.1/36.1<br>16.0/36.0<br>16.0/36.0<br>15.8/37.2<br>15.8/37.2<br>15.8/37.2<br>15.8/37.2 | 1.5<br>1.3<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0 |                    | 55<br>20<br>80<br>20<br>95<br>95                  | 20<br>40<br>45<br>40<br>20<br>20 | 40<br>40<br>45<br>40<br>55<br>55 | 0.1/0.2<br>0.03/0.07<br>0.009/0.02<br>0.009/0.02 |  | 73/66<br>78/73<br>85/77<br>95/85<br>95/85 | 5.7<br>8.8<br>9.5<br>18.7<br>19.6 | 200.00<br>320.00<br>420.00<br>450.00<br>750.00<br>850.00 |
| PARASOUND                 | T/DQ260  | D                                    | No   |                    | 10.8/  | 16.1/37.7  | 1.2  | 65                 | 66  | 16                               | 50                               | 0.05/0.1   | 0.07/0.12  | 82/76                                     | 12                                | 285.00   |
| PHILIPS                   | FT-50(RD)  | D                                    | No   |                    | 12.1/  |  | 1.3/   | 60                 | 35/75   | 24                               | 50                               | 0.05/0.1   |  | 86/78                                     | 8                                 | 259.00   |

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**T**UNERS TUNE MORE WITH THE TERK FM+



# Adcom announces the cure for the common receiver.



Today, there is no reason to compromise your favorite music by listening to a common receiver. Because the Adcom GTP-400 tuner/preamplifier with GFA-535 (60 watts per channel)\* amplifier gives you all the benefits of Adcom's legendary clear, dynamic sound for a price close to that of an ordinary receiver.

## Why Separates?

The limited space in receivers prevents the use of heavy duty, high-current, high-voltage power supplies found in the best separate components. Consequently, the performance of receivers is compromised for their questionable advantage of all-in-one convenience.

By dividing the tuner/preamplifier from the power amplifier, Adcom isolates low-current, low-voltage circuits from high-current, high-voltage elements ensuring sonic purity and demonstrably superior performance.

## More Sound—Less Money

Many of Adcom's components have been favorably compared to other components costing two and three times more. The GTP-400 with GFA-535 is a combination that promises to keep faith with this tradition of offering superb performance at a reasonable cost.

The price of these Adcom separates is close to that of an ordinary receiver. But no receiver will deliver the wide dynamic range and musical satisfaction of an Adcom system.

Ask your Adcom dealer for a demonstration of these affordable separates. You'll never listen to a common receiver again.

*\*Power output, watts/channel, continuous both channels driven into 8 ohms, 20 Hz - 20 kHz <0.09% THD.*

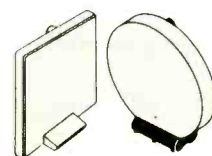
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details you can hear



# TUNERS

| MANUFACTURER   | Model<br>(R) = Remote Included,<br>(RO) = Remote Optional  | FM Only = F                     | Digitally Synthesized = D              | AM Stereo Capable?  | IHF (Usable) Sensitivity, dBf,<br>Mono/Stereo                              | Signal Strength for<br>50 dB Quieting, dBf | Capture Ratio, dB, Mono/Stereo   | AM Suppression, dB                        | Alternate Channel Selectivity, dB,<br>Wide/Narrow | Total Number of Station Presets  | Separation at 1 kHz, dB  | THD at 1 kHz, %, Mono/Stereo,<br>100% Modulation | THD at 6 kHz, %, Mono/Stereo,<br>100% Modulation   | Maximum S/N, -dB, Mono/Stereo                        | Weight, lbs.   | Price, \$ |
|----------------|--|---------------------------------|--|---|--|--|----------------------------------|---|---|----------------------------------|--|--|--|--|--|-----------|
| PIONEER        | F-656<br>F-445<br>F-91   | D<br>F<br>D                     | No<br>No<br>No                         | 10.8/<br>12.7/<br>9.8/                                      | 15.9/37.3<br>18/36.2<br>12.8/34.8  | 1.0<br><br>0.8                             | 65<br><br>70                     | 80<br>65<br>85                            | 24<br>24<br>24                                    | 60<br>45<br>55                   | 0.05/0.08<br>/0.4<br>0.009/0.02  | <br><br>0.02/0.07                                | 86/81<br>80/78<br>95/87                            | 7 1/2<br>7 3/4<br>11 1/2                             | 325.00<br>210.00<br>600.00                               |           |
| PROTON         | AT-670(RI)<br>440<br>AT-300<br>AT-200  | D<br>D<br>D<br>D                | No<br>No<br>No<br>No                   |   | 15.3/34.8<br>15.3/33.2<br>15.3/37.3<br>15.3/37.3                           | 1<br>1.5<br>1.5<br>1.5                     | 65<br>60<br>60<br>60             | 65<br>65<br>10<br>65                      | 27<br>12<br>10<br>12                              | 45<br>45<br>45<br>45             | 0.2/0.3<br>0.2/0.2<br>0.2/0.3<br>0.2/0.2                                   |  | 83/74<br>83/74<br>83/74<br>83/74                   | 15 1/2<br>8 1/8<br>7 1/2<br>7 1/2                    | 400.00<br>269.00<br>229.00<br>209.00                     |           |
| PSE            | Studio III   | F                               | No                                     |   | 17/40  | 1  | 70                               |   | 6   | 55                               | 0.1/0.2  |  | 75/70  | 9  | 795.00   |           |
| QED            | T260   | F                               | No                                     |   | 10/29  | 1.5  | 60                               | 53  | 4   | 40                               | 0.15/0.15  |  | 76/70  | 9  | 650.00   |           |
| QUAD           | FM4  | F                               | No                                     |   | 10/29  | 1.5  | 60                               | 53  | 7   |                                  | 0.15/0.15  | 0.15/0.15  | 76/70  | 6.6  | 695.00   |           |
| REVOX          | B260-S(RO)<br>B160(RO)   | F<br>F                          | No<br>No                               | 10.8/<br>10.8/  | 13.2/34.8<br>13.2/34.8   |  |                                  | 50/100<br>50/100                          | 60<br>30  | 43<br>43                         | /0.07<br>/0.07   |  | /80<br>/80   | 15 1/2<br>15 1/2                                     | 2500.00<br>990.00  |           |
| ROTEL          | RT830A<br>RT850A<br>RT870<br>RTC850(RI)<br>Tuner/Preamp  | D<br>D<br>D<br>D                | No<br>No<br>No<br>No                   | 10.8/<br>10.8/<br>10.8/<br>10.8/                            | 16/39.4<br>15.2/37.2<br>14.8/37.2<br>15.2/37.2                             | 1.5<br>1.0<br>/1.0<br>1.0                  | 55<br>57<br>58<br>57             | 60<br>70<br>60/80<br>70                   | 0<br>16<br>16<br>16                               | 40<br>45<br>48<br>45             | 0.08/<br>0.07/0.25<br>0.05/0.1<br>0.07/0.25                                |  | 80/73<br>80/75<br>80/75<br>80/75                   | 6.8<br>8.5<br>9<br>12                                | 199.00<br>299.00<br>399.00<br>499.00                     |           |
| SAE            | T102   | D                               | No                                     | 10.3/17.0   | 14.0/34.0  | 1.5/                                       | 55                               | 30/80                                     | 16  | 45                               | 0.10/0.15  | 0.15/0.20  | 75/70  | 17   | 349.00   |           |
| SANSUI         | Vintage<br>TU-X711<br>Vintage<br>TU-X701<br>Vintage<br>TU-X501<br>Vintage<br>TU-X301i<br>T-1000<br>T-900SW | D<br>D<br>D<br>D<br>D<br>D<br>D | No<br>No<br>No<br>No<br>No<br>No<br>No | 10.8/<br>10.8/<br>10.8/<br>10.8/<br>10.8/<br>10.8/<br>10.8/ | 16.2/37<br>16.2/37<br>16.0/36.0<br>16.0/38.0<br>16.5/37<br>17.0/37         | 1.0/<br>1.0/<br>1.0/<br>1.0<br>1.0<br>1.0  | 65<br>65<br>65<br>60<br>45<br>60 | 60/75<br>60/75<br>55/75<br>60<br>16<br>55 | 30<br>30<br>30<br>30<br>16<br>40                  | 60<br>60<br>50<br>40<br>40<br>40 | 0.009/0.02<br>0.009/0.02<br>0.05/0.06<br>0.08/0.12<br>0.15/0.2<br>0.15/0.2 |  | 98/91<br>98/91<br>86/80<br>79/73<br>75/<br>75/     | 11 1/4<br>11 1/4<br>7 3/4<br>6 1/4<br>6<br>5 1/2     | 625.00<br>550.00<br>350.00<br>250.00<br>145.00<br>175.00 |           |
| SHERWOOD       | TD-7010R(RO)<br>TD-1120  | D<br>D                          | No<br>No                               | 9.8/<br>11.2/   | 17.2/36.1<br>19.2/39.2   | 1.5<br>2.0                                 | 55<br>50                         | 70<br>60                                  | 30<br>24  | 50<br>45                         | 0.15/0.25<br>0.2/0.4   | 0.15/0.25<br>0.2/0.4                             | 80/75<br>75/68                                     | 7 5/8<br>6 5/8                                       | 199.95<br>149.95   |           |
| SONY ES        | ST-S730ES  | D                               | No                                     | 10.3/   | 16.8/37.9  | 1.0/                                       | 65                               | 70/65                                     | 20  | 70                               | 0.004/0.075  |  | 100/92   | 12 1/2   | 550.00   |           |
| SOUNDCRAFTSMEN | Pro-Tuner Four<br>Pro-PT Two<br>Tuner/Preamp<br>Pro-PT 5R(RI)<br>Tuner/Preamp                              | D                               | No                                     | 9.5/<br>10.3/<br>10.3/                                      | 12/36<br>12/36<br>12/36  | 1.0<br>1.2<br>1.2                          | 65<br>65<br>65                   | 80<br>80<br>80                            | 16<br>32<br>32                                    | 52<br>52<br>52                   | 0.04/0.08<br>0.04/0.08<br>0.04/0.08  |  | 85/75<br>85/75<br>85/75                            | 12<br>14<br>14                                       | 379.00<br>449.00<br>599.00                               |           |
| SOUNDSTREAM    | T-1(RO)  | D                               | No                                     | 11.2/17.2   | 14.7/31.2  | 1.5  | 60                               | 65  | 16  | 50                               | 0.1/0.1  | 0.12/0.1   | 81/79  | 17   | 795.00   |           |
| J. E. SUGDEN   | DTFM   | F                               | No                                     |   |  | 2.5/3.0                                    | 50                               | 60/90                                     | 5   | 40                               |  |  |  | 12   | 695.00   |           |
| SUMD           | Aurora   | D                               | No                                     | 11/17   | 16/34  | 1.0/1.0                                    | 60                               | 75/100                                    | 8   | 50                               | 0.04/0.05  | 0.05/0.08  | 85/82  | 10   | 729.00   |           |
| TANDBERG       | TPT-3001A<br>TPT-3031A   | F<br>F/D                        | No<br>No                               | 9.3/32.1  | 14.7/37.3<br>17.3/37.3   | 0.4/3<br>0.9                               | 70<br>70                         | /90<br>100                                | 8<br>16   | 60<br>45                         | 0.03/0.04<br>0.09/0.2  | 0.03/0.1   | 95/92<br>75/75                                     | 15.3<br>10.7   |  |           |
| TECHNICS       | ST-G70<br>ST-G460  | D<br>D                          | No<br>No                               | 10.8/   | 18.1/38.1<br>18.1/38.1   | 1.0/<br>1.0                                | 55<br>55                         | 30/55<br>65                               | 39<br>39  | 60<br>50                         | 0.015/0.02<br>0.05/0.1   |  | /73<br>80/73                                       | 7.7<br>4.9   | 379.00<br>239.00   |           |
| YAMAHA         | TX-2000(RI)<br>TX-1000U(RI)<br>TX-900U<br>TX-530<br>TX-330<br>YST T-90M                                    | D<br>D<br>D<br>D<br>D<br>D      | No<br>No<br>No<br>No<br>No<br>No       | 9.3<br>9.3<br>9.3<br>9.3<br>9.3<br>9.3/                     | 15.3/37.2<br>15.3/37.2<br>15.1/37.7<br>15.1/37.7<br>15.3/37.7<br>15.3/37.7 | 1.2<br>1.2<br><br><br><br>1.5              | 70<br>70<br><br>55<br>55<br>55   | 90<br>90<br><br>85<br>85<br>85            | 24<br>24<br>20<br>20<br>16<br>16                  | 68<br>68<br>60<br>50<br>40<br>40 | 0.02/0.03<br>0.02/0.03<br>0.02/0.03<br>0.05/0.07<br>0.1/0.2<br>/0.2        |  | 98/90<br>98/90<br>96/90<br>82/76<br>82/76<br>82/76 | 13 1/2<br>13 1/2<br>7 1/4<br>6 1/8<br>4 1/8<br>5 1/2 | 749.00<br>549.00<br>399.00<br>329.00<br>249.00<br>250.00 |           |

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# RECEIVERS

| MANUFACTURER       | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional | FM Only<br>F. Digital Synthesized = D,<br>AM Stereo Capable = A | AMPLIFIER SECTION                           |               |   |  |   |                       |                      |               |                                   |                                 |                                   |  | TUNER SECTION     |   |                                   |                                |                         |              |           |  |  |  |
|--------------------|--|---|---|---------------|---|--|---|-----------------------|----------------------|---------------|-----------------------------------|---------------------------------|-----------------------------------|--|-------------------|---|-----------------------------------|--------------------------------|-------------------------|--------------|-----------|--|--|--|
|                    |  |   | Average Watts per Channel,<br>8 Ohms 4 Ohms | THD, %        | Headphone Jack?<br>Jack with Level Control = LC | Rated Full-Power Bandwidth,<br>Hz to kHz | MM Phone S.R., -dB<br>"X" = 10 dB re 5 mV | MM Phone Overload, mV | Dynamic Headroom, dB | Video Inputs? | Surround Delay/Ambience Circuits? | Total Number of Station Presets | Mono IFR (Usable) Sensitivity, dB | Signal Strength for<br>50-dB Quieting, dBf | Capture Ratio, dB | TPO at 1 kHz, % Mono/Stereo,<br>100% Modulation | Alternate Channel Selectivity, dB | Maximum S.N., -dB, Mono/Stereo | Separation at 1 kHz, dB | Weight, Lbs. | Price, \$ |  |  |  |
|                    |  |   |   |               |   |  |   |                       |                      |               |                                   |                                 |                                   |  |                   |   |                                   |                                |                         |              |           |  |  |  |
| A/D/S/             | R4(RI)   |   | 65/   | 0.07          | Yes   | 20-20                                    | 70  | 150                   | 1.5                  | Yes           | No                                | 30                              | 11                                | 27/40                                      | 2                 | 0.1/0.15  | 65                                | 70/65                          | 47                      | 23           | 1000.00   |  |  |  |
| AR                 | X-07   |   | 70/95                                       | 0.03/<br>0.05 | Yes   | 10-150                                   |   | 160                   | 2.5                  | Yes           | No                                | 16                              | 11.2                              |  | 1.5               |   | 70                                | 78/70                          | 40                      | 25.1         | 769.90    |  |  |  |
|                    | X-05   |   | 40/   | 0.04          | Yes   |  |   | 180                   | 2                    | Yes           | No                                | 16                              | 11.2                              | 17.2/37.2                                  | 1.5               |   | 65                                | 72/70                          | 40                      | 18.1         | 499.90    |  |  |  |
| A + T              | R2000AC(RI)  |   | 120/190                                     | 0.004         | Yes   |  |   |                       |                      | No            | No                                |                                 |                                   |  |                   |   |                                   |                                | 70                      | 50           | 3200.00   |  |  |  |
| BANG & OLUFSEN     | Beomaster 5500   | D   | 50/   | 0.09          | Yes   | 20-20                                    | 78  | 110                   | 1.5                  | No            | No                                | 20                              | 14                                | 19/40                                      | 1.7               | 0.16/0.2  | 70                                | 75/70                          | 45                      | 19.2         | 2150.00   |  |  |  |
|                    | Beomaster 4500   | D   | 20/   | 0.09          | Yes   | 20-20                                    |   |                       | 1.6                  | No            | No                                | 20                              | 14                                | 19/40                                      | 1.7               | 0.3/0.3   | 70                                | 75/70                          | 40                      | 15.4         | 1098.00   |  |  |  |
|                    | Beomaster 3300   |   | 25/   | 0.1           | Yes   | 20-20                                    | 75  | 50                    | 1.6                  | No            | No                                | 5                               | 16                                | 23/43                                      | 1.7               | 0.3/0.35  | 60                                | 72/67                          | 36                      | 15.4         | 880.00    |  |  |  |
| CARRERA            | CR-2300  |   | 25/30                                       | 0.5           | LC  | 40-20                                    | 70  | 130                   | 1.75                 | No            | No                                |                                 | 17.2                              | 25.5/41.5                                  | 2.0               | 0.3/0.5   | 50                                | 72/65                          | 42                      | 12½          | 149.95    |  |  |  |
|                    | CR-2530  | D   | 30/33                                       | 0.25          | LC  | 20-20                                    | 75  | 150                   | 2.0                  | No            | No                                | 16                              | 12.5                              | 17.2/38.7                                  | 1.75              | 0.2/0.4   | 58                                | 72/68                          | 42                      | 13           | 199.95    |  |  |  |
| CARVER             | HR-722(RI)   | D   | 60/   | 0.05          | Yes   | 20-20                                    | 85  | 100                   | 3.3                  | No            | No                                | 20                              | 10.3                              | 15.3/37.1                                  | 1.5               | 0.09/0.2  | 52                                | 78                             | 46                      | 35           | 549.95    |  |  |  |
|                    | HR-752(RI)   | D   | 100/  | 0.05          | Yes   | 20-20                                    | 85  | 100                   | 4.7                  | No            | Yes                               | 20                              | 10.3                              | 15.3/37.1                                  | 1.5               | 0.09/0.2  | 52                                | 78                             | 46                      | 35           | 649.95    |  |  |  |
| DENON              | DRA-1025R(RI)  | D   | 125/  | 0.015         | Yes   | 5-40                                     | 92  | 150                   |                      | Yes           | No                                | 16                              | 10.3                              | 14.8/37.3                                  | 1.3               | 0.06/0.09                                       | 75                                | 86/82                          | 55                      | 26½          | 950.00    |  |  |  |
|                    | DRA-825R(RI)   | D   | 90/   | 0.015         | Yes   | 5-40                                     | 92  | 150                   |                      | Yes           | No                                | 16                              | 10.3                              | 14.8/37.3                                  | 1.3               | 0.06/0.09                                       | 75                                | 86/82                          | 55                      | 23           | 800.00    |  |  |  |
|                    | DRA-625R(RI)   | D   | 65/   | 0.05          | Yes   | 5-40                                     | 86  | 110                   |                      | No            | No                                | 16                              | 10.3                              | 15.3/38.5                                  | 1.3               | 0.08/0.15                                       | 55                                | 82/78                          | 40                      | 17¼          | 550.00    |  |  |  |
|                    | DRA-425R(RI)   | D   | 50/   | 0.05          | Yes   | 5-40                                     | 86  | 110                   |                      | No            | No                                | 16                              | 10.3                              | 15.3/38.5                                  | 1.3               | 0.1/0.2   | 55                                | 82/78                          | 40                      | 16½          | 450.00    |  |  |  |
|                    | DRA-325R(RI)   | D   | 40/   | 0.05          | Yes   | 10-40                                    | 86  | 150                   |                      | No            | No                                | 16                              | 10.3                              | 15.3/38.5                                  | 1.3               | 0.08/0.15                                       | 55                                | 82/78                          | 40                      | 12¼          | 350.00    |  |  |  |
|                    | DRA-25   | D   | 30/   | 0.05          | Yes   | 10-40                                    | 78  | 150                   |                      | No            | No                                | 16                              | 10.3                              | 15.3/38.5                                  | 1.5               | 0.1/0.2   | 55                                | 82/78                          | 40                      | 12           | 300.00    |  |  |  |
| DUAL               | CR5900   | D   | 40/60                                       | 0.02          | Yes   | 10-60                                    | 70  | 150                   | 1.5                  | Yes           | No                                | 16                              | 11.0                              | 14/30                                      | 1.5               | 0.05/1.0  | 80                                | 75/70                          | 40                      | 16½          | 449.00    |  |  |  |
|                    | CR5950RC(RI)   | D   | 70/85                                       | 0.02          | Yes   | 10-70                                    | 75  | 150                   | 1.5                  | Yes           | No                                | 16                              | 10.5                              | 13/30                                      | 1.0               | 0.05/1.0  | 80                                | 77/72                          | 40                      | 22           | 749.00    |  |  |  |
| ELECTRO-COMPA-NIET | AV-100(RI)   |   | 100/175                                     | 0.2           | No  |  |   |                       |                      | Yes           |                                   |                                 |                                   |  |                   |   |                                   |                                |                         |              |           |  |  |  |
| FISHER             | RS-Z1(RI)  | D   | 150/150                                     | 0.007         | Yes   | 20-20                                    | 82  | 160                   | 2.0                  | No            | No                                | 24                              | 10.3                              | 16.1/40                                    | 1.3               | 0.05/0.1  | 80                                | 85/80                          | 50                      | 46.2         | 1199.95   |  |  |  |
|                    | RS-627(RI)   | D   | 100/  | 0.05          | Yes   | 20-20                                    | 65  | 150                   | 1.5                  | No            | No                                | 24                              | 14.7                              | 19.2/42.1                                  | 1.5               | 0.3/0.4   | 55                                | 70/65                          | 45                      | 20           | 369.95    |  |  |  |
|                    | RS-615(RI)   | D   | 60/   | 0.09          | Yes   | 20-20                                    | 65  | 150                   | 1.5                  | No            | No                                | 24                              | 14.7                              | 19.2/42.1                                  | 1.5               | 0.3/0.4   | 55                                | 70/65                          | 35                      | 15           | 249.95    |  |  |  |
|                    | RS-605   | D   | 40/   | 0.09          | Yes   | 20-20                                    | 65  | 150                   | 1.5                  | No            | No                                | 24                              | 14.7                              | 19.2/42.1                                  | 1.5               | 0.3/0.4   | 55                                | 70/65                          | 35                      | 12.8         | 169.95    |  |  |  |
| HARMAN KARDON      | hk330Vi  | D   | 25/   | 0.09          | Yes   | 20-20                                    | 78  | 100                   | 1.4                  | No            | No                                | 18                              | 11.2                              | /38.2                                      | 1.5               | 0.1/0.12  | 70                                | 80/72                          | 45                      | 12½          | 299.00    |  |  |  |
|                    | hk440Vxi   | D   | 30/   | 0.09          | Yes   | 20-20                                    | 78  | 100                   | 1.75                 | No            | No                                | 18                              | 11.2                              | /37  | 1.0               | 0.07/0.12                                       | 70                                | 82/74                          | 50                      | 13.9         | 399.00    |  |  |  |
|                    | hk550Vxi   | D   | 45/   | 0.09          | Yes   | 20-20                                    | 78  | 100                   | 1.9                  | No            | No                                | 18                              | 11.2                              | /37  | 1.0               | 0.07/0.12                                       | 70                                | 82/74                          | 50                      | 15.4         | 499.00    |  |  |  |
|                    | hk880Vxi(RI)   | D   | 60/   | 0.08          | Yes   | 20-20                                    | 78  | 120                   | 2.2                  | Yes           | No                                | 18                              | 10.8                              | /36  | 1.0               | 0.07/0.12                                       | 70                                | 82/74                          | 50                      | 22           | 799.00    |  |  |  |
|                    | hk990Vxi(RI)   | D   | 90/   | 0.08          | Yes   | 20-20                                    | 78  | 120                   | 2.2                  | Yes           | No                                | 18                              | 10.8                              | /36  | 1.0               | 0.07/0.12                                       | 70                                | 82/74                          | 50                      | 28           | 1099.00   |  |  |  |
| JVC                | RX301BK(RI)  | D   | 40/   | 0.03          | LC  | 40-20                                    | 78  |                       |                      | No            | Yes                               | 40                              | 10.8                              | 16.3/38.3                                  | 1.5               | 0.15/0.2  | 60                                | 80/73                          | 40                      | 12.1         | 270.00    |  |  |  |
|                    | RX401BK(RI)  | D   | 50/   | 0.03          | LC  | 20-20                                    | 78  |                       |                      | No            | Yes                               | 40                              | 10.8                              | 16.3/38.3                                  | 1.5               | 0.15/0.2  | 60                                | 80/73                          | 40                      | 12.6         | 380.00    |  |  |  |
|                    | RX501BK(RI)  | D   | 65/   | 0.015         | LC  | 20-20                                    | 78  |                       |                      | No            | Yes                               | 40                              | 10.8                              | 16.3/38.3                                  | 1.5               | 0.15/0.2  | 60                                | 80/73                          | 40                      | 15           | 430.00    |  |  |  |
|                    | RX701VBK(RI)   | D   | 80/   | 0.007         | LC  | 20-20                                    | 78  |                       |                      | 2             | Yes                               | 40                              | 10.8                              | 16.3/38.3                                  | 1.5               | 0.15/0.2  | 60                                | 81/73                          | 40                      | 24.1         | 540.00    |  |  |  |
|                    | RX801VBK(RI)   | D   | 100/  | 0.007         | LC  | 20-20                                    | 78  |                       |                      | 2             | Yes                               | 40                              | 10.8                              | 16.3/38.3                                  | 1.5               | 0.15/0.2  | 60                                | 81/73                          | 40                      | 24.3         | 630.00    |  |  |  |
|                    | RX901VBK(RI)   | D   | 100/  | 0.007         | LC  | 20-20                                    | 80  |                       |                      | 3             | Yes                               | 40                              | 10.8                              | 16.3/38.3                                  | 1.5               | 0.15/0.2  | 65                                | 81/73                          | 40                      |              | 950.00    |  |  |  |
|                    | RX1010VTN(RI)  | D   | 120/  | 0.007         | LC  | 20-20                                    | 80  |                       |                      | 3             | Yes                               | 40                              | 10.8                              | 16.3/38.3                                  | 1.5               | 0.15/0.2  | 65                                | 81/73                          | 40                      |              | 1500.00   |  |  |  |
| KENWOOD            | KR-V9010(RI)   |   | 130/  | 0.008         | Yes   |  | 82  |                       |                      | 4             | Yes                               | 20                              | 10.8                              | 14.2/37.2                                  | 1.0               | 0.07/0.1  | 55                                | 80/74                          | 50                      | 32½          | 850.00    |  |  |  |
|                    | KR-V8010(RI)   |   | 100/  | 0.008         | Yes   |  | 82  |                       |                      | 3             | Yes                               | 20                              | 10.8                              | 14.2/37.2                                  | 1.0               | 0.07/0.1  | 55                                | 80/74                          | 50                      | 27½          | 650.00    |  |  |  |
|                    | KR-V7010(RI)   |   | 80/   | 0.008         | Yes   |  | 73  |                       |                      | 3             | Yes                               | 20                              | 10.8                              | 14.2/37.2                                  | 1.2               | 0.2/0.3   | 53                                | 78/72                          | 50                      | 18           | 499.00    |  |  |  |
|                    | KR-V6010(RI)   |   | 70/   | 0.09          | Yes   |  | 70  |                       |                      | 2             | Yes                               | 20                              | 11.2                              | 18.2/41.2                                  | 1.2               | 0.2/0.3   | 53                                | 78/72                          | 40                      | 16           | 399.00    |  |  |  |
|                    | KR-A5010(RI)   |   | 60/   | 0.5           | Yes   |  | 70  |                       |                      | 20            | 11.2                              | 18.2/41.2                       | 1.2                               | 0.2/0.3                                    | 53                | 78/72   | 40                                | 13                             | 299.00                  |              |           |  |  |  |
|                    | KR-A4010   |   | 45/   | 0.5           | Yes   |  | 70  |                       |                      | 20            | 11.2                              | 18.2/41.2                       | 1.2                               | 0.2/0.3                                    | 53                | 78/72   | 40                                | 11¾                            | 249.00                  |              |           |  |  |  |
| LUXMAN             | R113   | D   | 35/   | 0.08          | Yes   | 20-20                                    | 88  | 150                   | 1.5                  | No            | No                                | 20                              | 10.8                              | 14/38                                      | 1.5               | 0.1/0.18  | 60                                | 80/74                          | 45                      | 13.4         | 480.00    |  |  |  |
|                    | R115   | D   | 70/   | 0.03          | Yes   | 20-20                                    | 88  | 150                   | 3.0                  | Yes           | No                                | 20                              | 10.3                              | 13.2/36.6                                  | 1.5               | 0.08/0.11                                       | 50                                | 80/75                          | 50                      | 25.5         | 850.00    |  |  |  |
|                    | R117   | D   | 160/  | 0.03          | Yes   | 20-20                                    | 88  | 150                   | 4.4                  | Yes           | No                                | 20                              | 10.3                              | 13.2/36.6                                  | 1.5               | 0.08/0.11                                       | 50                                | 80/75                          | 50                      | 35.2         | 1200.00   |  |  |  |
| MARANTZ            | RS2252CB(RI)   | D   | 25/   | 0.05          |   | 20-20                                    | 64  |                       |                      |               |                                   | 12                              | 13.2                              |  | 2                 |   |                                   |                                |                         |              | 199.95    |  |  |  |
|                    | RS2253CB(RI)   | D   | 50/   | 0.05          |   | 20-20                                    | 64  |                       |                      |               |                                   | 12                              | 11.2                              |  | 2                 |   |                                   |                                |                         |              | 249.95    |  |  |  |
|                    | SR3600(RI)   | D   | 120x2<br>or<br>45x4                         |               | Yes   |  |   |                       |                      | Yes           | Yes                               |                                 |                                   |  |                   |   |                                   |                                |                         |              | 849.00    |  |  |  |
| (Continued)        | SR3500(RI)   | D   | 110/  |               | Yes   |  |   |                       |                      | Yes           | Yes                               |                                 |                                   |  |                   |   |                                   |                                |                         |              | 749.00    |  |  |  |
|                    | SR3300(RI)   | D   | 60/   |               | Yes   |  |   |                       |                      | Yes           | Yes                               | 32                              |                                   |  |                   |   |                                   |                                |                         |              | 429.00    |  |  |  |
|                    | SR560  | D   | 45/   |               | Yes   | 40-20                                    |   |                       |                      | Yes           | No                                | 16                              |                                   |  |                   |   |                                   |                                |                         |              | 249.00    |  |  |  |
|                    | TA100(RI)  | D   | 100/  |               | Yes   |  |   |                       |                      | Yes           | No                                | 16                              |                                   |  |                   |   |                                   |                                |                         |              | 499.95    |  |  |  |

**R**ECEIVERS RECEIVE MORE WITH THE TERK Pi<sup>2</sup>



# The most affordable way to add 100,000 square feet without a building permit.



You're looking at the biggest home improvement you can make without lifting a hammer.

Yamaha's new DSP-100.

One of the few additions that can make a man's home actually sound like his castle.

Recreating sonic depth and realism, that up to now, could only be experienced by attending concerts or screenings in the world's finest music halls and movie theaters.

The very same acoustic sampling that made the legendary Yamaha DSP-3000 legendary.

An important point, especially when you consider you can bring



home the new DSP-100 for less than half the price.

It features soundfields from 20 actual performing spaces — including famous concert halls, jazz clubs, movie theaters — there's even a setting for Dolby® Surround.

And like our top-of-the-line DSP-3000, the DSP-100 lets you adjust main and presence speaker levels with a single master volume control.

There's even a built-in test tone generator that helps you balance speaker levels manually or by remote control.

As well as superimposition — a remarkably useful feature that displays on your video screen all the settings and all the changes you make to each particular soundfield.

Stop by your local Yamaha home improvement center for a demonstration of the remarkable DSP-100 today.

And discover how to put on a 100,000 square foot room addition.

Without winding up in the poor house.

# YAMAHA®



The DSP-100 features the acoustic blueprints of 20 of the world's finest clubs, concert halls and theaters. All of which you can add to your home for a song.





### RX-1130 RECEIVER

125 watts per channel into 8 ohms from 20-20,000 Hz at no more than 0.015% THD  
 Low impedance drive capability provides 360 watts per channel into 2 ohms dynamic power  
 Additional amplifier section for two rear channels with rear channel level control  
 Five digital Surround Sound modes (Dolby,\* Natural, Hall, Simulated Stereo, Live)  
 Computer Servo Lock tuning  
 MM/MC Phono Selector  
 Banana plug compatible speaker connection terminals  
 24-segment signal quality meter  
 Continuously variable loudness control  
 Learning-capable multi-function remote control  
 Eight audio inputs, three video inputs  
 Four audio outputs, three video outputs  
 S-VHS compatible  
 Separate front and rear pre-main coupling terminals  
 Eight-mode REC OUT selector  
 Continuously variable delay time control  
 CD Direct switch  
 Motor-driven volume control with LED indicator  
 Sleep timer  
 Center defeat bass/mid-range/treble tone controls  
 16-station random access preset tuning with multi-status memory  
 Absolute Linear Amplification (ALA) circuitry  
 Preset indicators with preset number and station frequency  
 Front panel headphone jack  
 Tone bypass switch  
 High-gain AM loop antenna  
 Manual or auto IF Mode selector (wide or narrow)  
 Auto search tuning  
 Manual up/down tuning

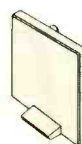
If any of these features compromised its sound, this is the first thing we'd remove: **YAMAHA®**

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# RECEIVERS

| MANUFACTURER           | Model<br>(RI) = Remote Included,<br>(RD) = Remote Optional | FM Only = F,<br>AM Stereo Cable = A | Average Watts per Channel,<br>8 Ohms 4 Ohms | AMPLIFIER SECTION |   |  |                                   |                       |                      |               |                                   |                                 |                                   | TUNER SECTION                              |                   |   |                                   |                                |                         |              |           |  |  |
|------------------------|--|-------------------------------------|---|-------------------|---|--|-----------------------------------|-----------------------|----------------------|---------------|-----------------------------------|---------------------------------|-----------------------------------|--|-------------------|---|-----------------------------------|--------------------------------|-------------------------|--------------|-----------|--|--|
|                        |  |                                     |   | THD, %            | Headphone Jack?<br>Jack with Level Control = LC | Rated Full-Power Bandwidth,<br>Hz to kHz | MM Phono S/N - dB<br>4 Wd re 5 mV | MM Phono Overload, mV | Dynamic Headroom, dB | Video Inputs? | Surround Delay/Ambience Circuits? | Total Number of Station Presets | Mono HF (Usable) Sensitivity, dBf | Signal Strength for<br>50-dB Quieting, dBf | Capture Ratio, dB | TFO at 1 kHz, % Mono-Stereo,<br>100% Modulation | Alternate Channel Selectivity, dB | Maximum S/N, - dB, Mono-Stereo | Separation at 1 kHz, dB | Weight, Lbs. | Price, \$ |  |  |
|                        |  |                                     |   |                   |   |  |                                   |                       |                      |               |                                   |                                 |                                   |  |                   |   |                                   |                                |                         |              |           |  |  |
| MARANTZ<br>(Continued) | RS3559(RI)   | D                                   | 125x2,<br>10x2,<br>20x1                     |                   |   |  |                                   |                       | Yes                  | Yes           | 30                                |                                 |                                   |  |                   |   |                                   |                                |                         |              | 1000.00   |  |  |
|                        | RS3557   | D                                   | 100x2,<br>10x2                              |                   |   |  |                                   |                       | Yes                  | Yes           |                                   |                                 |                                   |  |                   |   |                                   |                                |                         |              | 700.00    |  |  |
|                        | RS3555   | D                                   | 50x2,<br>10x2                               |                   |   |  |                                   |                       | Yes                  | Yes           |                                   |                                 |                                   |  |                   |   |                                   |                                |                         |              | 500.00    |  |  |
| McINTOSH               | MAC4300(RI)  |                                     | 100/100                                     | 0.02              | Yes   | 20-20                                    | 77                                | 90                    |                      |               | 6                                 | 12.6                            | 17.2/31.2                         | 1.5  | 0.08/0.08         | 55  | 75/70                             | 50                             | 34 1/2                  | 1499.00      |           |  |  |
|                        | MAC4280(RI)  |                                     | 75/100                                      | 0.03              | Yes   | 20-20                                    | 87                                | 80                    |                      |               | 5                                 | 10.8                            | 15.3/26.8                         | 1.5  | 0.1/0.1           | 60  | 80/75                             | 45                             | 25                      | 1995.00      |           |  |  |
|                        | MAC4275  |                                     | 75/100                                      | 0.03              | Yes   | 20-20                                    | 87                                | 80                    |                      |               | 5                                 | 10.8                            | 15.3/26.8                         | 1.5  | 0.1/0.1           | 60  | 80/75                             | 45                             | 25                      | 1795.00      |           |  |  |
| MITSUBISHI             | M-AV1(RI)  | D                                   | 125/  | 0.05              | LC  | 20-20                                    | 72                                |                       | 2                    | Yes           | Yes                               | 16                              | 10.8                              | 16.2/37.2                                  | 1.0               | 0.06/0.2  | 60                                | 80/75                          | 50                      | 27           | 1000.00   |  |  |
|                        | M-AV2(RI)  | D                                   | 80/   | 0.05              | LC  | 20-20                                    | 72                                |                       | 2                    | Yes           | Yes                               | 16                              | 10.8                              | 16.2/37.2                                  | 1.0               | 0.06/0.2  | 60                                | 80/75                          | 50                      | 22           | 800.00    |  |  |
|                        | M-AV3(RI)  | D                                   | 80/   | 0.05              | LC  | 20-20                                    | 72                                |                       | 2                    | Yes           | Yes                               | 16                              | 10.8                              | 16.2/37.2                                  | 1.0               | 0.06/0.2  | 60                                | 80/75                          | 50                      | 21           | 500.00    |  |  |
| NAD                    | 7020e  | D                                   | 20/   | 0.03              | Yes   | 20-20                                    | 75                                | 200                   | 2.5                  | Yes           | No                                | 10                              | 10.8                              | 14.4/37                                    | 1.5               | 0.1/0.1   | 58                                | 80/74                          | 45                      | 12           | 279.00    |  |  |
|                        | 7225PE   | D                                   | 25/   | 0.03              | Yes   | 20-20                                    | 76                                | 200                   | 4.4                  | Yes           | No                                | 10                              | 10.8                              | 14.4/37                                    | 1.5               | 0.1/0.1   | 58                                | 80/74                          | 45                      | 12.1         | 329.00    |  |  |
|                        | 7240PE   | D                                   | 40/   | 0.03              | Yes   | 20-20                                    | 76                                | 180                   | 6.0                  | Yes           | No                                | 10                              | 10.3                              | 14.2/36                                    | 1.5               | 0.09/0.09                                       | 65                                | 80/75                          | 50                      | 16.5         | 499.00    |  |  |
|                        | 7100(RI)   | D                                   | 50/   | 0.03              | Yes   | 20-20                                    | 75                                | 180                   | 6.0                  | Yes           | No                                | 14                              | 11                                | 13.9/35.6                                  | 1.6               | 0.1/0.1   | 70                                | 84/77                          | 50                      | 24.5         | 749.00    |  |  |
|                        | 7400(RI)   | D                                   | 100/  | 0.03              | Yes   | 20-20                                    | 76                                | 180                   | 5.7                  | Yes           | No                                | 14                              | 10.3                              | 13.1/35                                    | 1.5               | 0.08/0.08                                       | 75                                | 84/78                          | 50                      | 26           | 999.00    |  |  |
|                        | 7600(RI)   | D                                   | 150/  | 0.03              | Yes   | 20-20                                    | 80                                | 200                   | 4.0                  | Yes           | No                                | 14                              | 9                                 | 12/34                                      | 1.5               | 0.07/0.07                                       | 80                                | 85/80                          | 55                      | 34           | 1599.00   |  |  |
| NAKAMICHI              | TA-4A(RI)  | D                                   | 100/  | 0.1               | Yes   | 5-60                                     | 78                                | 180                   |                      | Yes           | No                                | 10                              | 11.0                              | 14.7/37.5                                  | 2.0               | 0.07/0.07                                       | 65                                | 82/75                          | 50                      | 33           | 1295.00   |  |  |
|                        | TA-3A(RI)  | D                                   | 75/   | 0.1               | Yes   | 5-60                                     | 78                                | 180                   |                      | Yes           | No                                | 10                              | 11.0                              | 14.7/37.5                                  | 2.0               | 0.07/0.07                                       | 55                                | 79/74                          | 50                      | 24 1/4       | 895.00    |  |  |
|                        | TA-2A(RI)  | D                                   | 50/   | 0.1               | Yes   | 5-50                                     | 78                                | 180                   |                      | No            | No                                | 10                              | 12.0                              | 15.7/38.5                                  | 2.0               | 0.1/0.1   | 55                                | 79/74                          | 50                      | 19           | 595.00    |  |  |
|                        | TA-1A  | D                                   | 35/   | 0.1               | Yes   | 10-40                                    | 78                                | 150                   |                      | No            | No                                | 10                              | 12.0                              | 15.7/38.5                                  | 2.0               | 0.15/0.2  | 55                                | 79/74                          | 45                      | 13 1/4       | 349.00    |  |  |
| NIKKO                  | R-400  | D                                   | 40/50                                       | 0.01              | Yes   | 10-100                                   | 87                                | 100                   | 2.43                 | Yes           | No                                | 10                              | 11.2                              | 17.2/37.2                                  | 2.0               | 0.15/0.3  | 76                                | 80/73                          | 46                      | 32           | 349.95    |  |  |
|                        | R-550  | D                                   | 55/62                                       | 0.01              | Yes   | 10-100                                   | 88                                | 100                   | 1.45                 | Yes           | No                                | 10                              | 11.2                              | 17.2/37.2                                  | 2.0               | 0.15/0.25                                       | 76                                | 80/73                          | 51                      | 32           | 499.95    |  |  |
| ONKYO                  | TX-800   | D                                   | 40/45                                       | 0.03              | Yes   | 40-20                                    | 85                                | 120                   |                      | No            | No                                | 20                              | 12.4                              | 18.2/38.2                                  | 1.5               | 0.15/0.3  | 50                                | 70/65                          | 40                      | 12.6         | 240.00    |  |  |
|                        | TX-820(RI)   | D                                   | 45/50                                       | 0.03              | Yes   | 40-20                                    | 85                                | 120                   |                      | No            | No                                | 20                              | 12.4                              | 18.2/38.2                                  | 1.5               | 0.15/0.3  | 50                                | 70/65                          | 40                      | 14.8         | 320.00    |  |  |
|                        | TX-840(RI)   | D                                   | 70/90                                       | 0.08              | Yes   | 20-20                                    | 85                                | 120                   |                      | Yes           | Yes                               | 20                              | 11.2                              | 17.2/37.2                                  | 1.5               | 0.15/0.3  | 50                                | 73/67                          | 45                      | 18.1         | 380.00    |  |  |
|                        | TX-840M<br>(w/Universal Remote)                            |                                     |   |                   |   |  |                                   |                       |                      |               |                                   |                                 |                                   |  |                   |   |                                   |                                |                         | 430.00       |           |  |  |
|                        | TX-860(RI)   | D                                   | 80/   | 0.04              | Yes   | 20-20                                    | 85                                | 120                   |                      | Yes           | Yes                               | 20                              | 10.8                              | 17.2/37.2                                  | 1.5               | 0.15/0.25                                       | 50                                | 73/67                          | 45                      | 19.4         | 500.00    |  |  |
|                        | TX-860M<br>(w/Universal Remote)                            |                                     |   |                   |   |  |                                   |                       |                      |               |                                   |                                 |                                   |  |                   |   |                                   |                                |                         | 550.00       |           |  |  |
|                        | Integra TX-870(RI)   | D                                   | 105/  | 0.025             | Yes   | 20-20                                    | 93                                | 150                   |                      | Yes           | Yes                               | 20                              | 10.8                              | 17.2/37.2                                  | 1.5               | 0.1/0.2   | 65                                | 73/67                          | 45                      | 29.1         | 680.00    |  |  |
|                        | Integra TX-870M<br>(w/Universal Remote)                    |                                     |   |                   |   |  |                                   |                       |                      |               |                                   |                                 |                                   |  |                   |   |                                   |                                |                         | 740.00       |           |  |  |
|                        | Integra TX-890(RI)   | D                                   | 125/  | 0.02              | Yes   | 20-20                                    | 93                                | 150                   |                      | Yes           | Yes                               | 20                              | 10.8                              | 17.2/37.2                                  | 1.3               | 0.1/0.18  | 65                                | 76/70                          | 45                      | 32.6         | 820.00    |  |  |
|                        | Integra TX-890M<br>(w/Universal Remote)                    |                                     |   |                   |   |  |                                   |                       |                      |               |                                   |                                 |                                   |  |                   |   |                                   |                                |                         | 880.00       |           |  |  |
|                        | TX-SV7M(RI)  | D                                   | 100/  | 0.04              | Yes   | 20-20                                    | 85                                | 120                   |                      | Yes           | Yes                               | 36                              | 11.2                              | 17.2/37.2                                  | 1.5               | 0.15/0.25                                       | 55                                | 73/67                          | 45                      | 31.3         | 1050.00   |  |  |
|                        | TX-SV90PRO (RI)  | D                                   | 110/  | 0.04              | Yes   | 20-20                                    | 80                                | 120                   |                      | Yes           | Yes                               | 20                              | 11.2                              | 17.2/37.2                                  | 1.5               | 0.1/0.2   | 65                                | 76/70                          | 45                      |              | 1200.00   |  |  |
| PARASOUND              | R/HD-600   | D                                   | 60/80                                       | 0.09              | Yes   | 20-20                                    | 78                                | 220                   | 1.5                  | Yes           |                                   | 16                              | 10.8                              | 15.3/37.7                                  | 1.2               | 0.5/0.1   | 66                                | 78/72                          | 50                      | 25           | 440.00    |  |  |
|                        | R/HD-300   | D                                   | 30/45                                       | 0.09              | Yes   | 20-20                                    | 78                                | 220                   | 1.5                  | Yes           |                                   | 12                              | 10.8                              | 15.3/37.7                                  | 1.2               | 0.5/0.1   | 66                                | 78/72                          | 50                      | 18           | 330.00    |  |  |
| PHILIPS                | FR-980   | D                                   | 125/200                                     | 0.01              | Yes   | 20-20                                    | 80                                |                       |                      | Yes           | Yes                               | 19                              | 13.5                              | 16.4/37.3                                  |                   | 0.1/0.2   | 65                                | 75/70                          | 50                      | 35           | 1099.00   |  |  |
|                        | FR-880   | D                                   | 75/125                                      | 0.01              | Yes   | 20-20                                    | 80                                |                       |                      | Yes           | Yes                               | 19                              | 13.5                              | 16.4/37.3                                  |                   | 0.1/0.2   | 65                                | 75/70                          | 50                      | 25           | 649.00    |  |  |
|                        | FR-780   | D                                   | 70/   | 0.05              | Yes   | 20-20                                    | 75                                |                       |                      | Yes           | No                                | 19                              | 13.5                              | 16.4/37.3                                  |                   | 0.2/0.4   | 65                                | 75/70                          | 50                      | 21           | 549.00    |  |  |
| PIONEER                | VSX-9500S  |                                     | 125/  | 0.005             | Yes   | 20-20                                    | 82                                | 150                   |                      | Yes           | Yes                               | 30                              | 10.8                              | 15.3/37                                    | 1.0               | 0.08/0.15                                       | 65                                | 80/75                          | 50                      | 30 1/4       | 1050.00   |  |  |
|                        | VSX-7500S  |                                     | 125/  | 0.005             | Yes   | 20-20                                    | 82                                | 150                   |                      | Yes           | Yes                               | 30                              | 10.8                              | 15.3/37                                    | 1.0               | 0.08/0.15                                       | 65                                | 80/75                          | 50                      | 28 1/2       | 900.00    |  |  |
|                        | VSX-5500(RI)   |                                     | 100/  | 0.005             | Yes   | 20-20                                    | 82                                | 130                   |                      | Yes           | Yes                               | 30                              | 10.8                              | 15.3/37.1                                  | 1.0               | 0.08/0.15                                       | 65                                | 80/76                          | 48                      | 22 1/8       | 710.00    |  |  |
|                        | VSX-5400   |                                     | 100/  | 0.005             | Yes   | 20-20                                    | 82                                | 130                   |                      | Yes           | Yes                               | 30                              | 10.8                              | 15.3/37.1                                  | 1.0               | 0.08/0.15                                       | 65                                | 80/76                          | 48                      | 22 1/8       | 650.00    |  |  |
|                        | VSX-4500S(RI)  |                                     | 100/  | 0.008             | Yes   | 20-20                                    | 73                                | 130                   |                      | Yes           | Yes                               | 30                              | 10.8                              | 15.3/37                                    | 1.0               | 0.2/0.3   | 55                                | 80/75                          | 40                      | 21           | 610.00    |  |  |
|                        | VSX-4400   |                                     | 100/  | 0.008             | Yes   | 20-20                                    | 73                                | 130                   |                      | Yes           | Yes                               | 30                              | 10.8                              | 15.3/37                                    | 1.0               | 0.2/0.3   | 55                                | 80/75                          | 40                      | 21           | 560.00    |  |  |
|                        | VSX-3300S(RI)  |                                     | 80/   | 0.05              | Yes   | 20-20                                    | 73                                | 130                   |                      | Yes           | Yes                               | 24                              | 10.8                              | 15.3/37.1                                  | 1.2               | 0.2/0.3   | 55                                | 80/76                          | 35                      | 18           | 445.00    |  |  |
|                        | VSX-3300   |                                     | 80/   | 0.05              | Yes   | 20-20                                    | 73                                | 130                   |                      | Yes           | Yes                               | 24                              | 10.8                              | 15.3/37.1                                  | 1.2               | 0.2/0.3   | 55                                | 80/76                          | 35                      | 18           | 395.00    |  |  |
|                        | SX-2300  |                                     | 60/   | 0.07              | Yes   | 20-20                                    | 72                                | 130                   | 1.5                  | No            | Yes                               | 24                              | 10.8                              | 15.3/37.1                                  | 1.2               | 0.2/0.3   | 55                                | 78/75                          | 35                      | 15 3/4       | 250.00    |  |  |
|                        | SX-1300  |                                     | 40/   | 0.07              | Yes   | 20-20                                    | 72                                | 130                   | 2.1                  | No            | No                                | 24                              | 10.8                              | 15.3/37.1                                  | 1.2               | 0.2/0.3   | 55                                | 78/75                          | 35                      | 13 1/8       | 210.00    |  |  |
| PROTON                 | AV-646(RI)   | D                                   | 60/   | 0.5               | LC  | 10-50                                    | 85                                | 150                   | 6                    | Yes           | No                                | 27                              | 10.3                              | 15.3/34.8                                  | 1.0               | 0.2/0.3   | 50                                | 83/74                          | 45                      | 29.8         | 900.00    |  |  |
|                        | D-940  | D                                   | 40/   | 0.1               | LC  | 10-60                                    | 92                                | 250                   | 6                    | Yes           | No                                | 16                              | 10.3                              | 15.3/33.2                                  | 1.5               | 0.1/  |                                   | 83/74                          | 45                      | 18.7         | 489.00    |  |  |
|                        | AV-300   | D                                   | 30/   | 0.5               | LC  | 10-50                                    | 90                                | 165                   | 6                    | Yes           | No                                | 10                              | 10.3                              | 15.3/37.2                                  | 1.5               | 0.2/  |                                   | 83/74                          | 45                      | 15.4         | 459.00    |  |  |
| REVOX                  | B285(RD)   | D                                   | 70/90                                       | 0.03              |   | 20-20                                    | 80                                | 150                   | 3                    | No            | No                                | 29                              | 12.8                              | 15.2/36.8                                  | 2                 | 0.15/0.3  |                                   | 84/80                          | 43                      | 33 1/2       | 2995.00   |  |  |

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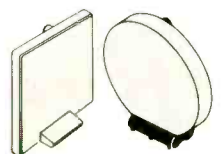




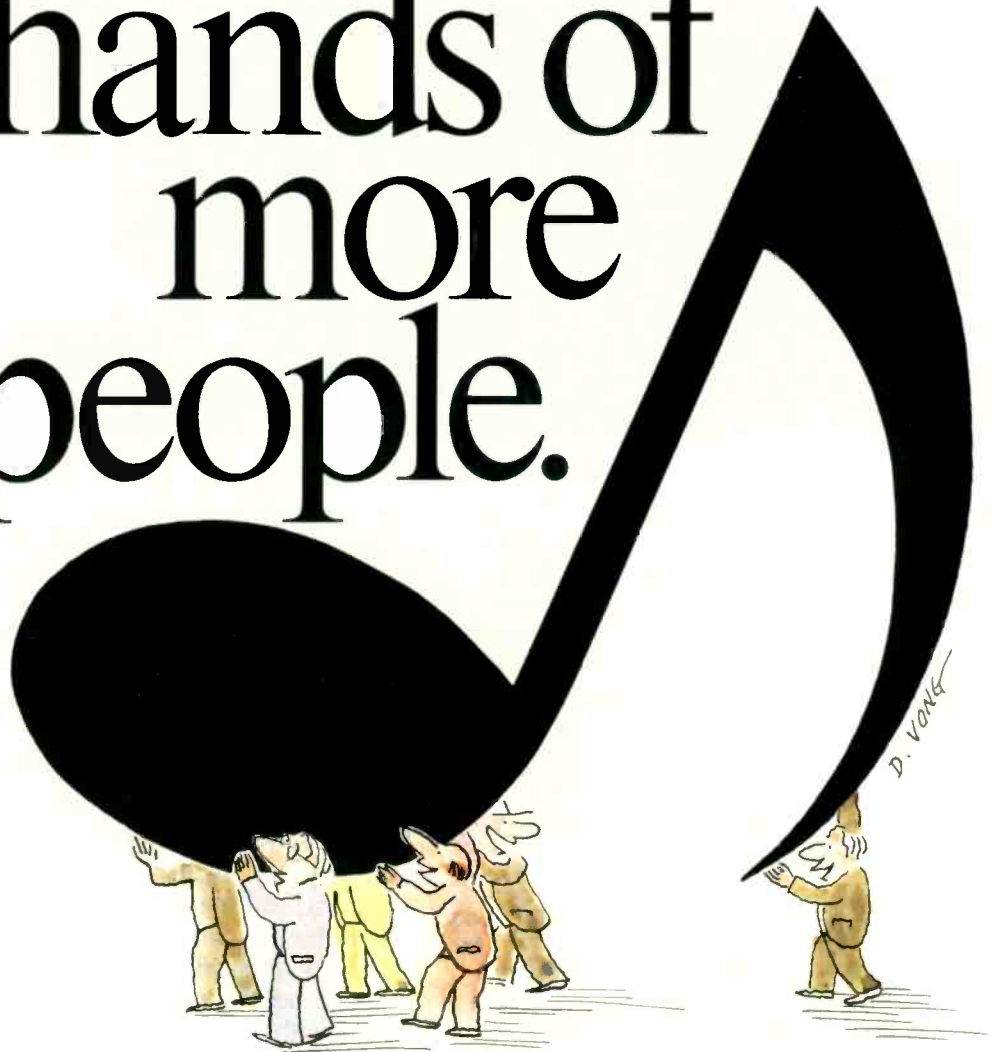
# RECEIVERS

| MANUFACTURER    | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional   | FM Div. = F, Digitally Synthesized = D,<br>AM Stereo Capable = A | AMPLIFIER SECTION   |  |   |   |  |   |  |  |   |  |  |   |   | TUNER SECTION   |  |   |  |   |   |  |  |  |  |
|-----------------|--|--|---|--|---|---|--|---|--|--|---|--|--|---|---|---|--|---|--|---|---|--|--|--|--|
|                 |  |  | Average Watts per Channel,<br>8 Ohms & Ohms                     | THD, %   | Headphone Jacks<br>Jack with Level Control = LC | Rated Full-Power Bandwidth,<br>Hz to kHz                    | MM Phono S/N, -dB<br>"A" Wtd. re 5 mV  | MM Phono Overload, mV                         | Dynamic Headroom, dB                                 | Video Inputs?                                | Surround Delay/Ambience Circuits?           | Total Number of Station Presets        | Mono IIF (Usable) Sensitivity, dBf                   | Signal Strength for<br>50-dB Quieting, dBf  | Capture Ratio, dB                             | THD at 1 kHz, % Mono Stereo,<br>100% Modulation                                     | Alternate Channel Selectivity, dB      | Maximum S/N, -dB Mono Stereo                                | Separation at 1 kHz, dB                | Weight, Lbs.                                  | Price, \$   |  |  |  |  |
|                 |  |  |   |  |   |   |  |   |  |  |   |  |  |   |   |   |  |   |  |   |   |  |  |  |  |
| RDTEL           | RX845<br>RX850A<br>RX855   | D<br>D<br>D  | 30/<br>30/<br>55  | 0.05<br>0.03<br>0.03                                     | Yes<br>Yes<br>Yes                               | 20-20<br>20-20<br>20-20                                     | 80<br>80<br>80                         | 150<br>170<br>300                             |  | No<br>No<br>No                               | No<br>No<br>No                              | 16<br>16<br>16                         | 10.0<br>10.8<br>10.8                                 | 15.2/37.2<br>15.2/37.2<br>15.2/37.2   | 1.5<br>1.0<br>1.0                             | 0.2/0.5<br>0.07/0.25<br>0.07/0.25   |  | 77/70<br>80/75<br>80/75                                     |  | 17<br>19<br>29                                | 299.00<br>399.00<br>549.00  |  |  |  |  |
| SAE             | R102   | D  | 50/75   | 0.02   | Yes   | 20-20   | 82                                     | 150   | 1.0  | No   | No  | 16                                     | 11.2   | 14.4/35.8   | 1.5   | 0.10/0.15   | 45                                     | 75/70   | 50                                     | 26  | 499.00  |  |  |  |  |
| SANSUI          | RZ-7000<br>RZ-5000<br>RZ-3000<br>RZ-1000   | D<br>D<br>D<br>D   | 70/<br>60/<br>50/<br>32   | 0.02<br>0.05<br>0.09<br>0.09                             | Yes<br>Yes<br>Yes<br>Yes                        | 20-20<br>20-20<br>20-20<br>20-20                            | 73<br>73<br>73<br>73                   | 100<br>100<br>100<br>100                      | 1.5<br>1.5<br>1.75<br>1.75                           | Yes<br>Yes<br>Yes<br>Yes                     | No<br>No<br>No<br>No                        | 30<br>30<br>30<br>30                   | 11.2<br>11.2<br>13.2<br>13.2                         | 17.2<br>17.2<br>18/<br>18/  | 1.5<br>1.5<br>1.5<br>1.5                      |   | 50<br>50<br>50<br>50                   | 76/70<br>76/70<br>76/70<br>76/70                            | 40<br>40<br>40<br>40                   | 22<br>21<br>21<br>14½                         | 570.00<br>430.00<br>365.00<br>285.00                                |  |  |  |  |
| SCOTT           | RS-250<br>RS-500(RI)<br>RS-1000(RI)<br>STA-1200(RI)<br>STA-1510(RI)  | D<br>D<br>D<br>D<br>D  | 25/<br>50/<br>100/<br>110/<br>150/                              | 0.9<br>0.5<br>0.09<br>0.05<br>0.009                      | Yes<br>Yes<br>Yes<br>Yes<br>Yes                 | 20-20<br>20-20<br>20-20<br>20-20<br>20-20                   |  |   |  | Yes<br>Yes<br>Yes<br>Yes<br>Yes              |   | 16<br>16<br>24<br>24<br>24             |  | 10.8  |   | 0.5/1.0<br>0.4/0.5  |  | 70/65   | 45<br>40<br>40                         |   |   |  |  |  |  |
| SHARP           | SA-R55AV(RI)<br>SA-R75AV(RI)   | D<br>D   | 55/<br>75/  | 0.08<br>0.05   | Yes<br>Yes                                      | 20-20<br>20-20  |  |   |  | Yes<br>Yes                                   | Yes<br>Yes                                  | 30<br>30                               |  |   |   |   |  |   |  | 14<br>16                                      | 369.95<br>459.95  |  |  |  |  |
| SHERWOOD        | RA-1140<br>RA-1142<br>RA-1145R(RI)<br>RA-1240R(RI)<br>RV-1340R(RI)   | D<br>D<br>D<br>D<br>D  | 25/<br>50/<br>50/<br>70/<br>100/<br>(Front)<br>20/<br>(Rear)    | 0.2<br>0.05<br>0.09<br>0.08<br>0.04                      | Yes<br>Yes<br>Yes<br>Yes<br>Yes                 | 40-20<br>40-20<br>20-20<br>20-20<br>20-20                   | 75<br>75<br>75<br>75<br>78             | 150<br>150<br>150<br>150<br>190               |  | Yes<br>Yes<br>Yes<br>Yes<br>Yes              | Yes<br>Yes<br>Yes<br>Yes<br>Yes             | 24<br>24<br>30<br>30<br>30             | 11.2<br>11.2<br>11.2<br>9.8<br>9.8                   | 19.2/39.2<br>19.2/39.2<br>19.2/39.2<br>14.8/36.8<br>14.8/36.1                           | 2.0<br>2.0<br>2.0<br>2.0<br>1.5               | 0.2/0.4<br>0.2/0.4<br>0.2/0.4<br>0.15/0.25<br>0.15/0.25                             | 60<br>60<br>60<br>60<br>70             | 75/68<br>75/68<br>75/68<br>75/68<br>80/75                   | 45<br>45<br>45<br>45<br>50             | 10¾<br>15½<br>13¼<br>17½<br>21½               | 149.95<br>199.95<br>239.95<br>299.95<br>499.95                      |  |  |  |  |
| SDNY            | STR-D2010(RI)<br>STR-AV1010 (RI)<br>STR-AV910(RI)<br>STR-AV710(RI)<br>STR-AV310<br>STR-AV210                     | D<br>D<br>D<br>D<br>D<br>D                                       | 130/<br>120/<br>100/<br>55/<br>40/<br>40/                       | 0.008<br>0.008<br>0.03<br>0.08<br>0.8<br>0.8             | LC<br>LC<br>LC<br>LC<br>LC<br>LC                |   | 74<br>74<br>74<br>74<br>74<br>74       | 150<br>150<br>150<br>150<br>150<br>150        |  | 3<br>3<br>2<br>2<br>2                        | Yes<br>Yes<br>Yes<br>Yes<br>Yes             | 30<br>30<br>30<br>30<br>30<br>30       | 11.2<br>11.2<br>11.2<br>11.2<br>11.2<br>11.2         | 18.3/38.3<br>18.3/38.3<br>18.3/38.3<br>18.3/38.3<br>18.3/38.3<br>18.3/38.3              | 1.2<br>1.2<br>1.2<br>1.2<br>1.2<br>1.2        | 0.2/0.4<br>0.2/0.4<br>0.3/0.5<br>0.3/0.5<br>0.3/0.5<br>0.3/0.5                      | 60<br>60<br>60<br>60<br>60<br>60       | 84/78<br>84/78<br>80/74<br>80/74<br>80/74<br>80/74          | 45<br>45<br>45<br>45<br>45<br>45       | 26½<br>21¼<br>21<br>14¾<br>13¾<br>13          | 1100.00<br>700.00<br>480.00<br>350.00<br>240.00<br>210.00           |  |  |  |  |
| SDNY ES         | STR-GX10ES (RI)<br>STR-GX9ES(RI)<br>STR-GX7ESII (RI)<br>STR-GX6ESII (RI)<br>STR-GX5ESII (RI)<br>STR-GX4ESII (RI) | D<br>D<br>D<br>D<br>D<br>D                                       | 150/<br>130/<br>120/<br>100/<br>80/<br>50/                      | 0.007<br>0.007<br>0.008<br>0.03<br>0.08<br>0.08          | LC<br>LC<br>LC<br>LC<br>LC<br>LC                | 5-60<br>5-60<br>5-60<br>5-60<br>10-30<br>10-30              | 90<br>90<br>79<br>79<br>79<br>79       | 150<br>150<br>150<br>150<br>150<br>150        | 1.85<br>1.85<br>2<br>2<br>2<br>2                     | 3<br>3<br>3<br>2<br>2<br>No                  | No<br>No<br>No<br>No<br>No<br>No            | 20<br>20<br>36<br>36<br>30<br>30       | 10.3<br>10.3<br>11.2<br>11.2<br>11.2<br>11.2         | 16.8/37.9<br>16.8/37.9<br>18.3/38.3<br>18.3/38.3<br>18.3/38.3<br>18.3/38.3              | 1<br>1<br>1.2<br>1.2<br>1.2<br>1.2            | 0.06/0.08<br>0.06/0.08<br>0.1/0.2<br>0.1/0.2<br>0.3/0.5<br>0.3/0.5                  | 65<br>65<br>65<br>65<br>60<br>60       | 88/84<br>88/84<br>82/76<br>82/76<br>80/74<br>80/74          | 60<br>60<br>50<br>50<br>45<br>45       | 38½<br>37½<br>18<br>16<br>16¼<br>15¼          | 1200.00<br>1000.00<br>750.00<br>600.00<br>500.00<br>380.00          |  |  |  |  |
| TANDBERG        | TPR-3110A<br>TPR-3080A<br>TPR-3040A  |  |   | 0.05<br>0.09<br>0.09                                     | LC<br>LC<br>LC                                  |   |  | 70<br>70<br>70                                |  | Yes<br>Yes<br>Yes                            | No<br>No<br>No                              | 16<br>16<br>16                         | 12.8<br>12.8<br>12.8                                 | 17.3/37.3<br>17.3/37.3<br>17.3/37.3   | 0.9<br>0.9<br>0.9                             | 0.09/0.2<br>0.09/0.2<br>0.09/0.2  | 100<br>100<br>100                      | 75/75<br>75/75<br>75/75                                     | 45<br>45<br>45                         | 27<br>26½<br>16½                              |   |  |  |  |  |
| TEAC            | AG-55(RI)<br>AG-75   | D<br>D   | 55/<br>75/  | 0.05<br>0.02   | Yes<br>Yes                                      | 20-20<br>40-20  | 70<br>80                               |   | 2.5  | No<br>No                                     | No<br>Yes                                   | 8<br>16                                | 11.2<br>11.2   |   | 0.25/0.05<br>0.2/0.5                          |   | 90<br>78/72                            | 40<br>40  | 15.4<br>15.4                           | 299.95<br>399.95                              |   |  |  |  |  |
| TECHNICS        | SA-R530 (RI)<br>SA-R477(RI)<br>SA-R377(RI)<br>SA-R277(RI)<br>SA-R177(RI)<br>SA-160                               | D<br>D<br>D<br>D<br>D<br>D                                       | 100/<br>100/<br>80/<br>60/<br>40/<br>40/                        | 0.007<br>0.008<br>0.008<br>0.05<br>0.03<br>0.3           | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes          | 20-20<br>20-20<br>20-20<br>20-20<br>40-20<br>40-20          | 70<br>70<br>70<br>70<br>68<br>68       | 150<br>150<br>160<br>160<br>160<br>150        | 1.2<br>1.2<br>1.2<br>1.2<br>1.2<br>1.2               | Yes<br>Yes<br>Yes<br>Yes<br>No<br>No         | Yes<br>Yes<br>Yes<br>No<br>No<br>No         | 24<br>24<br>24<br>24<br>24<br>24       | 11.2<br>11.2<br>11.2<br>11.2<br>11.2<br>11.2         | 20.2/40.2<br>20.2/40.2<br>20.2/40.2<br>20.2/40.2<br>20.2/40.2<br>20.2/40.2              | 1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0        | 0.15/0.2<br>0.2/0.3<br>0.2/0.3<br>0.2/0.3<br>0.2/0.3<br>0.2/0.3                     | 65<br>65<br>65<br>65<br>65<br>65       | 75/71<br>75/71<br>75/70<br>75/70<br>75/70<br>75/70          | 40<br>40<br>40<br>40<br>40<br>40       | 23<br>23<br>20<br>19<br>17<br>13              | 699.00<br>529.00<br>379.00<br>329.00<br>279.00<br>209.00            |  |  |  |  |
| VECTOR RESEARCH | VRX-2700<br>VRX-3600R(RI)<br>VRX-5200R(RI)<br>VRX-6200R(RI)<br>VRX-8200R(RI)<br>VRX-9200R(RI)<br>VRX-3550        | D<br>D<br>D<br>D<br>D<br>D<br>D                                  | 30/33<br>40/45<br>50/60<br>65/75<br>110/125<br>120/135<br>55/60 | 0.09<br>0.08<br>0.07<br>0.05<br>0.03<br>0.03<br>0.25     | LC<br>LC<br>LC<br>LC<br>LC<br>LC<br>LC          | 20-20<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20<br>20-20 | 78<br>78<br>80<br>82<br>83<br>83<br>75 | 190<br>190<br>190<br>190<br>200<br>200<br>150 | 1.85<br>1.85<br>1.90<br>2.0<br>2.0<br>2.0<br>1.5     | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>No | No<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>No | 20<br>20<br>20<br>16<br>20<br>20<br>16 | 11.2<br>11.2<br>11.2<br>10.2<br>10.2<br>10.2<br>12.5 | 17.2/38.7<br>15.6/37.6<br>15.6/37.6<br>14.6/36.2<br>14.6/35.5<br>14.6/35.5<br>17.2/38.7 | 1.5<br>1.5<br>1.3<br>1.2<br>1.0<br>1.0<br>1.8 | 0.25/0.5<br>0.2/0.4<br>0.17/0.35<br>0.12/0.25<br>0.1/0.2<br>0.1/0.2<br>0.2/0.4      | 58<br>58<br>60<br>60<br>65<br>65<br>58 | 72/68<br>72/68<br>74/70<br>75/70<br>76/71<br>76/71<br>72/68 | 40<br>42<br>42<br>45<br>48<br>48<br>42 | 13<br>15<br>17<br>20<br>24<br>26<br>13        | 219.95<br>319.95<br>369.95<br>449.95<br>659.95<br>849.95<br>249.95  |  |  |  |  |
| YAMAHA          | RX-1130Ti(RI)<br>RX-330<br>RX-1100U(RI)<br>RX-930(RI)<br>RX-830(RI)<br>RX-730(RI)<br>RX-530(RI)                  | D<br>D<br>D<br>D<br>D<br>D<br>D                                  | 125/<br>40/<br>125/<br>85/<br>70/<br>50/<br>50/                 | 0.015<br>0.02<br>0.015<br>0.015<br>0.015<br>0.02<br>0.02 | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes   | 10-50<br>10-40<br>10-50<br>10-50<br>10-50<br>10-50<br>10-50 | 92<br>88<br>92<br>92<br>88<br>94<br>88 | 110<br>110<br>110<br>110<br>110<br>110<br>110 | 1.58<br>2.24<br>1.58<br>1.84<br>2.15<br>1.80<br>2.10 | Yes<br>No<br>Yes<br>Yes<br>Yes<br>Yes<br>No  | Yes<br>No<br>Yes<br>Yes<br>Yes<br>Yes<br>No | 16<br>16<br>16<br>16<br>16<br>16<br>16 | 8.8<br>9.3<br>8.3<br>9.3<br>9.3<br>9.3<br>9.3        | 14.8/37.3<br>15.1/37.7<br>14.8/37.3<br>15.1/37.7<br>15.1/37.7<br>15.1/37.7<br>15.1/37.7 | 1.2<br>1.5<br>1.2<br>1.5<br>1.5<br>1.5<br>1.5 | 0.05/0.07<br>0.1/0.2<br>0.05/0.07<br>0.07/0.07<br>0.07/0.07<br>0.07/0.07<br>0.1/0.1 | 85<br>85<br>85<br>55<br>55<br>55<br>55 | 85/81<br>81/76<br>85/81<br>81/76<br>81/76<br>81/76<br>81/76 | 54<br>50<br>50<br>52<br>52<br>52<br>50 | 31¾<br>11½<br>26¾<br>23¾<br>16½<br>14¾<br>12¾ | 1199.00<br>299.00<br>999.00<br>849.00<br>599.00<br>499.00<br>399.00 |  |  |  |  |

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Announcing a  
new movement  
to put more  
power into the  
hands of  
more  
people.





# The A GTP-400 Tu The sound o



**A**dcom brings the superior performance of its separates (amplifiers, preamps and tuners) into a price range previously associated with ordinary receivers with the introduction of the new GTP-400 Tuner/Preamplifier. By combining the GTP-400 with one of Adcom's power amplifiers, you can now afford the clear sound, powerful dynamics and exceptional performance for which Adcom has been called "legendary" by the critics. The GTP-400 will put more power into your hands than you ever thought possible...and its sound is truly revolutionary.

## Why Separates Instead of a Receiver

Because receivers have limited space, they cannot be equipped with the heavy duty, high-current, high-voltage power supplies available in

the best separate components. And if a receiver was so equipped, it would generate unacceptable levels of heat and hum, inevitably degrading all performance parameters.

Consequently, the overall performance of receivers is always compromised for the seeming advantage of all-in-one convenience and affordability.

## The Tuner/Preamp Advantage

The GTP-400 Tuner/Preamplifier eliminates all such compromises. By dividing the tuner/preamplifier from the power amplifier, low-current, low-voltage elements are totally isolated from high-current, high-voltage elements ensuring sonic quality and superior performance.

And because the GTP-400 is designed to be used with any of Adcom's power amplifiers, you

# Adcom Preamplifier/Preamp: for a revolution.



have the advantage of choosing the right amount of power for your needs. If 60 watts per channel will drive your speakers to the level you want, consider our least expensive amplifier, the GFA-535. If you need more power, consider the 100 watt GFA-545 or Adcom's legendary 200 watt GFA-555. For the truly power hungry, the GTP-400 will drive two GFA-555's each bridged in mono, for an awesome 600 watts per channel.

## Affordable High-Performance

Designers and engineers usually use Class "A" audio circuits in components where price is no object. Demanded by those who can distinguish outstanding sonic performance from merely average, Class "A" circuits are employed in the GTP-400's phono and high-level preamp stages. These circuits provide superior resolution and

dramatic musicality. It took Adcom's approach to high performance/high value to make Class "A" affordable.

## More Sound for Less Money

Several of Adcom's components have been favorably compared to other components costing two and three times more. The GTP-400 promises to keep faith with this tradition of exceptional value by delivering superb performance at a reasonable price. *(over please)*

**ADCOM**<sup>®</sup>  
fine stereo components

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# How the Adcom GTP-400 stacks up.



GTP-400/GFA-535 (60 watts/ch)\*



GTP-400/GFA-545 (100 watts/ch)\*



GTP-400/GFA-555 (200 watts/ch)\*

## The Preamplifier Section

Optimum signal-to-noise ratios at both the phono and high level inputs ensure superior performance from your treasured LP's as well as your new compact discs and a wide range of HiFi video sources.

Proprietary linear-gain amplifiers in the high level and phono stages operate in full Class "A" to provide low distortion, low noise and high speed. High accuracy in the RIAA equalization circuit provides superb sound from high output moving coil or moving magnet phono cartridges.

A separate recording selector allows listening to one source while recording another. Feedback tone controls and contouring circuits can fine tune your system to room acoustics or individual listening tastes.

## The Tuner Section

Quartz-referenced and digitally synthesized, the tuner has an accuracy of 0.00025% providing a significant reduction in audible distortion.

Eight FM stations and eight AM stations can be programmed for instant retrieval at the touch of

## Specifications

### Preamplifier

Total harmonic distortion: <0.01%  
IM distortion: 0.005%  
Frequency response: 20 Hz - 20 kHz  $\pm 0.1$  dB  
Maximum output level: > 8 volts  
Input sensitivity for .5V output:  
Phono: 0.8 mV  
High level: 78 mV  
Signal-to-noise ratio:  
For .5V output: Phono: 80 dB  
For 2V output: High level: > 95 dB  
Tone controls:  
Bass (40 Hz)  $\pm 9.0$  dB  
Treble (15 kHz)  $\pm 7.5$  dB  
Output impedance: 100 ohms  
Voltage: 117V/60Hz (Available in 220V/50Hz on special order)  
Dimensions: 17  $\times$  3  $\frac{1}{4}$   $\times$  12  $\frac{3}{4}$  "  
(432  $\times$  80  $\times$  325 mm)  
Shipping weight: 15 lbs (6.8 kg)

### FM Tuner

IHF sensitivity, mono: 11 dBf  
Signal strength for -50 dB quieting, mono/stereo: 13.5/37 dBf  
Capture ratio: 1.7 dB  
Alternate channel selectivity: 75 dB  
Separation at 1 kHz: 50 dB  
THD/stereo at 1 kHz: 0.1%  
Maximum signal-to-noise ratio, mono/stereo: 80/75 dB  
Frequency response: 30 Hz - 15 kHz  $\pm 0.5$  dB  
Antenna impedance: 75 or 300 ohms

a button. Once a station is tuned in, it's locked in without drift. A touch of another button activates the scan mode, up or down.

When reception conditions are marginal, a switchable high-blend circuit reduces background noise and fading of FM stereo signals.

## The Sound of a Revolution

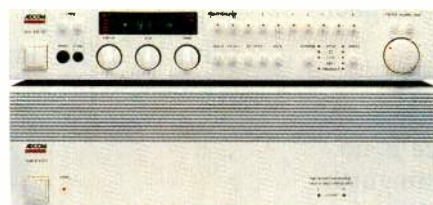
The price of the GTP-400 with a GFA-535 power amplifier (illustrated above, left) is close to that of a good receiver. But that's as close as they get... because no receiver will deliver the wide dynamic range and lasting satisfaction of an Adcom music system.

So if you would like to be part of the new movement towards bringing more power into your home, ask your Adcom dealer to demonstrate the GTP-400 with any Adcom power amplifier. You'll hear what a revolution sounds like.

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fine stereo components

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*Adcom components also available with optional white front panel.*

\*Power output, watts/channel, continuous both channels driven into 8 ohms, 20 Hz - 20 kHz <0.09% THD. © 1988 ADCOM

Enter No. 12 on Reader Service Card

# TURNTABLES

| MANUFACTURER | SPEED CODE     |   |  |    |                 |     |                             |  |                          |    |              |  |                      | TONEARM |                            |  |                             |  |                             |  |  |  |                               |  |   |  |  |  |                          |  |                               |  |                             |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|              | Model          |   | RI = Remote Included<br>(RO) = Remote Optional |    | Speeds—See Code |     | Wow & Flutter,<br>DIN 45507 |  | Rumble, -68, DIN 45509-B |    | Drive System |  | Speed Inaccuracy, ±% |         | Speed Adjustment Range, ±% |  | Controls Outside Dustcover? |  | Multi-Play? Number of Discs |  | Type: Phono = P, Linear = L,<br>Servo = S, Air-bearing = A |  | Pivot Stylus Distance, inches |  | Auto Cue = C, Auto Return = R,<br>Programmable Play = P |  | Recommended Tracking Force<br>Range, Grams |  | Anti-Skating Adjustment? |  | Cartridge Weight Range, Grams |  | Total Cable Capacitance, pF |  | Cap. Mount: Fixed = R, Removable Shell = R,<br>P, Mount = F, Changeable Wind = W |  | Dimensions, inches,<br>including Dustcover |  | Price, \$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|              |                |   |  |    |                 |     |                             |  |                          |    |              |  |                      |         |                            |  |                             |  |                             |  |  |  |                               |  |   |  |  |  |                          |  |                               |  |                             |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ALPHASON     | Sonata         | B | 0.03   | 76 | Belt            | 0.1 |                             |  | Yes                      | No |              |  |                      |         |                            |  |                             |  |                             |  |  |  |                               |  |   |  |  |  |                          |  |                               |  |                             |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AR           | ES-1<br>EB-101 | B | 0.04   | 78 | Belt            |     |                             |  |                          |    | P            |  |                      |         |                            |  |                             |  |                             |  |  |  |                               |  |   |  |  |  |                          |  |                               |  |                             |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|              |                | B | 0.05   | 72 | Belt            |     |                             |  |                          |    | P            |  |                      |         |                            |  |                             |  |                             |  |  |  |                               |  |   |  |  |  |                          |  |                               |  |                             |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



# TURNTABLES

| MANUFACTURER              | Model<br>(R) = Remote Included,<br>(RO) = Remote Optional       | Speeds—See Code | Wow & Flutter,<br>% DIN 45-507 | Rumble, -dB, DIN 45-538-B | Drive System | Speed Inaccuracy, ±% | Speed Adjustment Range, ±% | Controls Outside Dustcover? | Multi-Play? Number of Discs | Type: Pivoted = P, Linear = L,<br>Zero S, Air-bearing = A | Pivot-Stylus Distance, inches | TONEARM   |  |                          |                               |  |  |                |                                 |        |
|---------------------------|---|-----------------|--------------------------------|---------------------------|--------------|----------------------|----------------------------|-----------------------------|-----------------------------|---|-------------------------------|---|--|--------------------------|-------------------------------|--|--|----------------|---------------------------------|--------|
|                           |   |                 |                                |                           |              |                      |                            |                             |                             |   |                               | Auto Cue = C, Auto Return = R,<br>Programmable Play = P | Recommended Tracking Force<br>Range, Grams | Anti-Skating Adjustment? | Cartridge Weight Range, Grams | Total Cable Capacitance, pF<br>Cart. Mount = F, Removable Shield = R,<br>P Mount = P, Champagne Wire = W | Dimensions, inches,<br>Including Dustcover | Price, \$      |                                 |        |
|                           |   |                 |                                |                           |              |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                |                                 |        |
| MAPLENDOLL<br>(Continued) | Athena  | B               | 0.003                          | 80                        | Belt         | 0.003                |                            | Yes                         | 1                           | L/A   |                               | C<br>(Opt.)   | 1.0-2.5                                    |                          | 2.5-18                        |  | R  | 19½ x 17½ x 6¾ | 795.00                          |        |
|                           | Athena MK II  | B               | 0.003                          | 80                        | Belt         | 0.003                |                            | Yes                         | 1                           | L/A   |                               | C<br>(Opt.)   | 1.0-2.5                                    |                          | 2.5-18                        |  | R  | 19½ x 17½ x 6¾ | 995.00                          |        |
|                           | Ariadne   | B               | 0.003                          | 80                        | Belt         | 0.003                |                            | Yes                         | 1                           | L/A   |                               | C<br>(Opt.)   | 1.0-2.5                                    |                          | 2.5-18                        |  | R  | 17½ x 15½ x 5½ | 1295.00                         |        |
|                           | Artemis   | B               | 0.003                          | 80                        | Belt         | 0.003                |                            | Yes                         | 1                           | L/A   |                               | C<br>(Opt.)   | 1.0-2.5                                    |                          | 2.5-18                        |  | R  | 25 x 17 x 6¾   | 1795.00                         |        |
| MARANTZ                   | TT185   | B               |                                |                           | Belt         |                      |                            | Yes                         | 1                           | P   |                               |   |  |                          |                               |  | P  |                | 139.00                          |        |
|                           | TT2462  | B               | 0.07                           | 70                        | Belt         | 0.5                  |                            | Yes                         | 1                           | P   |                               | C/R   |  |                          |                               |  | P  |                | 89.95                           |        |
|                           | TT275   | B               |                                |                           | Direct       |                      |                            |                             | 1                           | P   |                               | R   |  |                          |                               |  | P  |                | 199.00                          |        |
|                           | TT285   | B               |                                |                           | Belt         |                      |                            |                             | 1                           | L   |                               | C/R/P   |  |                          |                               |  | P  |                | 279.00                          |        |
| MEITNER AUDIO             | AT-2  | C               |                                |                           | Belt         |                      | 6                          | Yes                         | No                          | P   |                               |   | 1-3  | Yes                      | 3-13                          |  | F  | 13 x 12½ x 8   | 1850.00                         |        |
| MERRILL AUDIO             | Heirloom  | B               | 0.02                           | 78                        | Belt         | 0.05                 |                            | Opt.                        |                             |   |                               |   |  |                          |                               |  |  | 19 x 15 x 8    | 990.00                          |        |
|                           | Heirloom<br>w/Remote<br>Power<br>Supply                         | B               | 0.02                           | 78                        | Belt         | 0.05                 |                            | Yes                         |                             |   |                               |   |  |                          |                               |  |  | 19 x 15 x 8    | 1470.00                         |        |
| J. A. MICHELL             | Syncro  | B               | 0.05                           | 76                        | Belt         | 0.1                  | 0                          | No                          | No                          | P   | 9¾                            |   | 9-3.5                                      | Yes                      | 3-8                           |  | F  | 17¼ x 14¾ x 5¼ | 795.00                          |        |
|                           | Syncro &<br>Rega RB250  | B               | 0.05                           | 76                        | Belt         | 0.1                  | 0                          | No                          | No                          |   |                               |   |  |                          |                               |  |  | 17¼ x 14¾ x 5¼ | 995.00                          |        |
|                           | GyroDec   | B               | 0.04                           | 81                        | Belt         | 0.05                 | 0                          | No                          | No                          |   |                               |   |  |                          |                               |  |  | 21¼ x 16¾ x 7½ | 1395.00                         |        |
|                           | GyroDec LE  | B               | 0.05                           | 81                        | Belt         | 0.05                 | 0                          | No                          | No                          |   |                               |   |  |                          |                               |  |  | 21¼ x 16¾ x 7½ | 1595.00                         |        |
| ONKYO                     | CP-1200A  | B               | 0.045                          |                           | Belt         |                      |                            | Yes                         | No                          | P   |                               | R   |  | Yes                      |                               |  | R  | 16½ x 14¾ x 5½ | 130.00                          |        |
|                           | CP-1500F  | B               | 0.023                          |                           | Direct       |                      |                            | Yes                         |                             | P   |                               | C/R   |  | Yes                      |                               |  | R  |                | 260.00                          |        |
|                           | Integra   | B               | 0.023                          |                           | Direct       |                      |                            | Yes                         |                             | P   | 8½                            | C/R   | 1.7  | Yes                      | 4-9                           |  | R  | 17¾ x 16¼ x 6¾ | 360.00                          |        |
| OPUS 3                    | Continuo  | B               | 0.03                           | 77                        | Belt         | 0.1                  |                            | Yes                         | No                          |   |                               |   |  |                          |                               |  |  | 18 x 18 x 16.6 | 650.00                          |        |
| ORACLE                    | Paris   | B               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | 550.00                          |        |
|                           | Alexandria  | B               |                                |                           | Belt         |                      | 5                          |                             |                             |   |                               |   |  |                          |                               |  |  |                | 1195.00                         |        |
|                           | MKIV DS   | A               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | 895.00                          |        |
|                           | Alexandria  | B               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | From                            |        |
|                           | MKIV SS   | B               |                                |                           | Belt         |                      | 5                          |                             |                             |   |                               |   |  |                          |                               |  |  |                | 1895.00                         |        |
|                           | Delphi  | A               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | 1595.00                         |        |
|                           | MKIV DS   | B               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | From                            |        |
|                           | Delphi  | A               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | 2995.00                         |        |
|                           | MKIV SS   | B               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | From                            |        |
|                           | Premiere  | B               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | 2995.00                         |        |
|                           | MKIV  | B               |                                |                           | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  |                | From                            |        |
| PIONEER                   | PL-600/KUC  | B               | 0.06                           | 68                        | Belt         |                      |                            |                             | No                          | No  | P/S                           | 8¾  | R  | 2.0-3.0                  | Yes                           | 4-8  |  | R              | 16½ x 4¾ x 14¾                  | 140.00 |
|                           | PL-L550   | B               | 0.025                          | 80                        | Direct       |                      |                            | Yes                         | No                          | L   | 8¾                            | R   |  |                          |                               |  | P  | 16½ x 4¾ x 14¾ | 270.00                          |        |
|                           | PL-910  | B               | 0.06                           | 70                        | Belt         |                      |                            | Yes                         | No                          | L   | 3¾                            | R/P   | 1.0-1.5                                    |                          |                               |  | F  | 16½ x 4¾ x 13¾ | 400.00                          |        |
|                           | PL-670  | B               | 0.025                          | 78                        | Direct       |                      |                            | No                          | No                          | P/S   | 8¾                            | R   |  | Yes                      |                               |  | P  | 16½ x 4¾ x 14¾ | 175.00                          |        |
|                           | PL-90   | B               | 0.018                          | 85                        | Direct       |                      |                            | No                          | No                          | P/S   | 11½                           | R   |  | Yes                      | 2.4-12                        |  | R  | 23½ x 8½ x 17½ | 950.00                          |        |
| REGA RESEARCH             | Planar 2  | B               |                                |                           | Belt         |                      |                            | No                          | No                          | P   | 9¾                            |   | 0.5-3.0                                    | Yes                      | 3-18                          | 200  | F  | 17½ x 14¾ x 4¾ | 499.00                          |        |
|                           | Planar 3  | B               |                                |                           | Belt         |                      |                            | No                          | No                          | P   | 9¾                            |   | 0.5-3.0                                    | Yes                      | 3-18                          | 200  | F  | 17½ x 14¾ x 4¾ | 599.00                          |        |
|                           | Planar 78   | †               |                                |                           | Belt         |                      |                            | No                          | No                          | P   | 9¾                            |   | 0.5-3.0                                    | Yes                      | 3-18                          | 200  | F  | 17½ x 14¾ x 4¾ | 499.00;<br>†78 rpm<br>only      |        |
| REVOLVER                  | Revolver<br>w/Revolver<br>Arm                                   | B               | 0.08                           | 65                        | Belt         | 0.02                 |                            | No                          | No                          | P   | 9                             |   | 0.75-3.0                                   | Yes                      | 3.0-10.0                      | 45   | F  | 16½ x 14½ x 4¼ | From<br>545.00                  |        |
|                           | Revolver<br>w/Revolver<br>Super Arm                             | B               | 0.08                           | 65                        | Belt         | 0.02                 |                            | No                          | No                          | P   | 9                             |   | 0.75-3.0                                   | Yes                      | 2.0-12                        | 45   | F  | 16½ x 14½ x 4¼ | From<br>799.00                  |        |
|                           | Revolver<br>Rebel w/Arm<br>& Audio-<br>Technica<br>AT-95E Cart. | B               | 0.08                           | 65                        | Belt         | 0.02                 |                            | No                          | No                          | P   | 9                             |   | 0.75-3.0                                   | Yes                      | 2.0-10.0                      | 45   | F  | 16½ x 14½ x 4¼ | 399.00                          |        |
| REVOX                     | B291(RO)  | B               | 0.05                           | 72                        | Direct       | 0.01                 | 9.9                        | Yes                         | No                          | L/S   | 1½                            | C/R   | 0.8-2.0                                    |                          | 2.5-10                        | 220  | F/P  | 17¾ x 5½ x 15½ | 1500.00                         |        |
| ROKSAN                    | Xerxes  | B               | 0.03                           | 83                        | Belt         |                      | 0.5                        | Yes                         | No                          |   |                               |   |  |                          |                               |  |  | 15 x 6 x 19    | 1995.00                         |        |
| SANSUI                    | P-2000  | B               | 0.1                            |                           | Direct       |                      | 3                          | Yes                         | No                          | S   |                               | C/R/P   | 2.5  | No                       | 5                             |  | W  | 17 x 3¾ x 9    | 180.00                          |        |
|                           | P-900E  | B               | 0.1                            |                           | Direct       |                      |                            | Yes                         | No                          | S   |                               | C/R/P   | 2.5  |                          | 5                             |  | P  | 17 x 3¾ x 13   | 90.00                           |        |
| SCOTT                     | PS 60C  | B               | 0.08                           |                           | Belt         |                      |                            |                             |                             | P   |                               | R   |  |                          |                               |  | P  |                |                                 |        |
|                           | PS 70C  | B               | 0.08                           |                           | Belt         |                      |                            |                             |                             | P   |                               | R   |  |                          |                               |  |  |                |                                 |        |
| SHADOW<br>PRODUCTS        | Shadow<br>312   | B               | 0.04                           | 78                        | Belt         |                      |                            | No                          | No                          |   |                               |   |  |                          |                               |  |  | 19½ x 14½ x 6¾ | From<br>995.00                  |        |
| SHERWOOD                  | PF-1170R<br>(RO)  | B               | 0.06                           | 65                        | Direct       |                      |                            | Yes                         | 1                           | P   | 8¾                            | C/R   | 0-3  | Yes                      | 4-8                           | 250  | W  | 17¾ x 4½ x 15  | 149.95                          |        |
|                           | PM-1270   | B               | 0.06                           | 65                        | Belt         |                      |                            | Yes                         | 1                           | P   | 8¾                            | R   | 0-3  | Yes                      | 4-7                           | 250  | W  | 17¾ x 6 x 15½  | 139.95                          |        |
| SIMPLYPHYSICS             | Dark Star<br>Series II  | B               |                                | 80                        | Belt         |                      |                            |                             |                             |   |                               |   |  |                          |                               |  |  | 22 x 21 x 8    | 1095.00;<br>w/Stand,<br>1295.00 |        |
|                           | Signature<br>Series II  | B               |                                | 83                        | Belt         |                      |                            |                             |                             | L/A   | 4                             | R   | 0.75-2.5                                   |                          |                               |  | W  | 22 x 21 x 8    | 3495.00<br>w/Stand              |        |
|                           | Dark Star<br>Phono<br>System                                    | B               |                                | 80                        | Belt         |                      |                            |                             |                             | L/A   | 4                             |   | 0.75-2.5                                   |                          |                               |  | W  |                | 1995.00<br>w/Stand              |        |

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# TURNTABLES

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|--|---|---|---|--|--|---|----------------------------|---|--|--|--|--|---|--|---|---------------------------------|---|---|--|--|--|--|--|
| MANUFACTURER   | Model<br>(R) = Remote Included,<br>(RO) = Remote Optional   | Speeds—See Code   | Wow & Flutter,<br>DIN 45-507  | Rumble, —dB, DIN 45-539-B  | Drive System   | Speed Inaccuracy, ±%                          | Speed Adjustment Range, ±% | Controls Outside Dustcover?   | Multi-Play? Number of Discs  | Type: P=Piezo, L=Linear, S=Servo, A=Air-bearing    | Pivot Stylus Distance, Inches                            | Auto Cue=C, Auto Return=R, Programmable Play=P | Recommended Tracking Force Range, Grams                                       | Anti-Skating Adjustment?   | Cartridge Weight Range, Grams                                     | Total Cable Capacitance, pF     | Crt. Mount: Fixed = F, Removable Shell=R, P=Mini-P, Changeable Wand=W | Dimensions, Inches, Including Dustcover   | Price, \$  |  |  |  |  |
|  |   |   |   |  |  |   |                            |   |  |  |  |  |   |  |   |                                 |   |   |  |  |  |  |  |
| SONOGRAPH  | SG3A<br>SG3   | B<br>B  | 0.1<br>0.1  | 65<br>65   | Belt<br>Belt   |   |                            |   | P  | 9¼   |  |  | Yes   |  |   | F                               | 18 x 14 x 7<br>18 x 14 x 7  | 795.00<br>595.00  |  |  |  |  |  |
| SONY   | PS-FL71IB<br>PS-LX520B<br>PS-LX430  | B<br>B<br>B   | 0.03<br>0.035<br>0.045  | 75<br>75<br>70   | Direct<br>Direct<br>Belt   | 0.03<br>0.03                                  |                            | Yes<br>Yes<br>Yes   | No<br>No<br>No   | L<br>L<br>P  | 3<br>3<br>8½   | C/R<br>C/R<br>C/R                              | 1.5<br>1.5<br>1.75  | No<br>No<br>Yes  |   | P<br>P<br>P                     | 17 x 15½ x 3⅞<br>17 x 14⅞ x 3¾<br>17 x 14 x 4⅞                        | 350.00<br>270.00<br>180.00  |  |  |  |  |  |
| SOTA   | Deluxe<br>Sapphire III<br>Deluxe<br>Vacuum<br>Star III<br>Cosmos  | C<br>C<br>C   | 0.03<br>0.03<br>0.03  | 88.2<br>88.2<br>88.2   | Belt<br>Belt<br>Belt   | 0.02<br>0.02<br>0.02                          | 5<br>5<br>5                | No<br>No<br>No  | No<br>No<br>No   |  |  |  |   |  |   |                                 | 20¼ x 16½ x 7½<br>20¼ x 16½ x 7½<br>20¼ x 16½ x 7½                    | 1295.00<br>w/Clamp<br>1600.00<br>w/Vacuum<br>4000.00<br>w/Clamp,<br>Vacuum,<br>a.c. Con-<br>ditioner  |  |  |  |  |  |
| SPACE & TIME   | Aura  | B   | 0.04  |  | Belt   |   | 4                          | Yes   |  |  |  |  |   |  |   |                                 |   | 4950.00   |  |  |  |  |  |
| SYSTEMDEK  | IIX<br>IIXE<br>IVE  | B<br>B<br>B   | 0.08<br>0.08<br>0.06  | 78<br>78<br>78   | Belt<br>Belt<br>Belt   | 0.15<br>0.01<br>0.01                          | 2<br>2<br>2                | No<br>No<br>No  | No<br>No<br>No   | P/L/A<br>P/L/A<br>P/L/A                            |  |  | Yes<br>Yes<br>Yes   |  | 300<br>300<br>300   | F<br>F<br>F                     | 18½ x 14⅜ x 5⅝<br>18½ x 14⅜ x 5⅝<br>19⅝ x 15⅝ x 6                     | 559.00<br>659.00<br>899.00  |  |  |  |  |  |
| TECHNICS   | SP-10MK3<br>SP-10MK2A<br>SP-15<br>SP-25<br>SL-1200MK2<br>SL-MA1<br>SL-J33(RO)<br>SL-QD33(RO)<br>SL-DD33<br>SL-DD22<br>SL-L20K<br>SL-BD22K<br>SL-BD20A | C<br>C<br>C<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B | 0.015<br>0.025<br>0.025<br>0.025<br>0.025<br>0.025<br>0.025<br>0.025<br>0.025<br>0.025<br>0.045<br>0.045<br>0.045 | 92<br>78<br>78<br>78<br>78<br>81<br>78<br>78<br>78<br>78<br>70<br>70<br>70 | Direct<br>Direct<br>Direct<br>Direct<br>Direct<br>Direct<br>Direct<br>Direct<br>Direct<br>Direct<br>Belt<br>Belt<br>Belt | 0.001<br>0.025<br>0.002<br>0.002              | 9.9<br>9.9<br>6.0<br>8.0   | Yes<br>No<br>No<br>No<br>No<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes | No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No | P<br>P/S<br>L/S<br>P<br>P<br>P<br>P<br>L<br>P<br>P | 9⅞<br>4⅞<br>9⅞<br>9⅞<br>9⅞<br>9⅞<br>4⅞<br>9⅞<br>9⅞<br>9⅞ | C/R<br>C/R/P<br>C/R<br>C<br>R<br>C<br>R        | 0-2.5<br>1.25<br>1.25<br>1.25<br>1.25<br>1.25<br>1.25<br>1.25<br>1.25<br>1.25 | Yes<br>Yes<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No | 3-9.5<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6 |                                 | R<br>P<br>P<br>P<br>P<br>P<br>P<br>P<br>P<br>P<br>P<br>P              | 14½ x 4 x 14½<br>14½ x 4 x 14½<br>13¾ x 4 x 14½<br>13¾ x 3¼ x 14½<br>17⅞ x 6¼ x 14¼<br>17⅞ x 6¾ x 16½<br>12⅝ x 3½ x 12⅝<br>17 x 3⅝ x 14¾<br>17 x 4 x 14¾<br>17 x 4 x 14¾<br>17 x 3¾ x 13¾<br>17 x 3¾ x 14¾<br>17 x 3⅝ x 14¾ | 2699.00<br>1399.00<br>899.00<br>569.00<br>529.00<br>489.00<br>249.00<br>199.00<br>169.00<br>159.00<br>189.00<br>139.00<br>119.00 |  |  |  |  |
| THORENS  | TD 280<br>MK II<br>TD 316<br>MK II<br>TD 318<br>MK II<br>TD 320<br>MK II<br>TD 520<br>TD 321<br>TD 521  | B<br>B<br>B<br>B<br>B<br>C<br>B<br>C                          | 0.045<br>0.04<br>0.04<br>0.35<br>0.35<br>0.35<br>0.35   | 70<br>70<br>70<br>72<br>72<br>72<br>72                                     | Belt<br>Belt<br>Belt<br>Belt<br>Belt<br>Belt<br>Belt   | 0.2<br>0.2<br>0.2<br>0.2<br>0.1<br>0.2<br>0.1 |                            | No<br>No<br>No<br>No<br>No<br>No<br>No  | No<br>No<br>No<br>No<br>No<br>No<br>No                                     | P<br>P<br>P<br>P<br>P<br>P<br>P                    | 9⅞<br>9⅞<br>9⅞<br>9⅞<br>9¾                               | C<br>C<br>C<br>C<br>C                          | 1-3<br>1-3<br>1-3<br>1-3<br>1-3   | Yes<br>Yes<br>Yes<br>Yes<br>Yes  | 3-8<br>3-8<br>3-8<br>3-8<br>3-8                                   | 300<br>150<br>150<br>100<br>140 | R<br>R<br>R<br>R<br>R   | 17⅞ x 14 x 5⅝<br>17⅞ x 13¾ x 6¾<br>17⅞ x 13¾ x 6¾<br>17⅞ x 13¾ x 6¾<br>21¾ x 16⅝ x 7<br>17⅞ x 13¾ x 6¾<br>21¼ x 16⅝ x 7   | 300.00<br>400.00<br>500.00<br>675.00<br>1200.00<br>500.00<br>1000.00   |  |  |  |  |
| TOWNSHEND<br>AUDIO   | Rock<br>Reference<br>Avalon   | B<br>B  | 0.04<br>0.08  | 88<br>77   | Belt<br>Belt   | 0.05<br>0.1                                   |                            | Yes<br>Yes  |  |  |  |  |   |  |   |                                 |   | 3600.00<br>650.00   |  |  |  |  |  |
| VECTOR<br>RESEARCH   | VT-155<br>VT-185<br>VT-320  | B<br>B<br>B   | 0.07<br>0.05<br>0.05  | 65<br>68<br>69   | Belt<br>Belt<br>Belt   | 0.02<br>0.02<br>0.02                          | 3<br>3                     | Yes<br>Yes<br>Yes   | No<br>No<br>No   | P<br>P<br>L  | 8<br>8½<br>P   | R<br>R<br>P                                    | 1.25-3<br>1.25-3<br>1.25-3  | No<br>Yes<br>Yes   | 2.5-5<br>2.5-5  | P<br>R<br>F                     |   | 99.95<br>185.95<br>199.95   |  |  |  |  |  |
| VERSA<br>DYNAMICS  | 1.0<br>2.0  | B<br>B  |   |  | Belt<br>Belt   |   |                            |   |  | L/A<br>L/A   |  |  | 1.0-4.0<br>1.0-4.0  |  |   | F<br>R                          | 15¾ x 20¾ x 9<br>18⅞ x 17⅞ x 9¼                                       | 5950.00<br>12,500.  |  |  |  |  |  |
| VOYD<br>TURNABLES  | Voyd<br>(Split Phase)<br>Valdi  | B<br>B  | 0.004<br>0.005  | 80<br>78   | Belt<br>Belt   | 0.001<br>0.001                                |                            | Yes<br>Yes  |  |  |  |  |   |  |   |                                 | 20 x 16½ x 6½<br>18 x 14 x 6  | 2200.00<br>1400.00  |  |  |  |  |  |
| VPI  | HW-19 Jr.<br>HW-19 MKIII<br>T.N.T.<br>Reference   | B<br>B<br>D   | 0.03<br>0.03<br>0.02  | 79<br>79<br>81   | Belt<br>Belt<br>Belt   | 0.05<br>0.05<br>0.01                          |                            | No<br>No<br>No  | No<br>No<br>No   |  |  |  |   |  |   |                                 | 21¼ x 16½ x 6<br>21¼ x 16½ x 7<br>25 x 19 x 8                         | 600.00<br>1140.00<br>3000.00  |  |  |  |  |  |
| WELL TEMPERED<br>LAB   | Well<br>Tempered<br>Classic<br>Well<br>Tempered<br>Record<br>Player<br>Well<br>Tempered<br>Signature  | B<br>B<br>B   |   |  | Belt<br>Belt<br>Belt   |   |                            | No<br>No<br>No  | 1<br>1<br>1  | P<br>P<br>P  | 9<br>9<br>9  |  | Yes<br>No<br>Yes  |  |   | F<br>F<br>F                     | 19 x 15 x 8   | 1795.00<br>895.00<br>6500.00  |  |  |  |  |  |
| WIN RESEARCH   | SEC-10<br>SW-10   | B<br>B  | 0.05<br>0.05  | 85<br>85   | Direct<br>Direct   | 0.001<br>0.01                                 | 5<br>5                     | Yes<br>Yes  | No<br>No   |  |  |  |   |  |   |                                 | 21 x 16 x 7½<br>21 x 16 x 7½  | 4000.00<br>1495.00  |  |  |  |  |  |
| YAMAHA   | TT500U<br>TT400U<br>TT300U<br>P-90M   | B<br>B<br>B<br>B  | 0.03<br>0.045<br>0.045<br>0.05  | 78<br>70<br>70<br>70   | Direct<br>Belt<br>Belt<br>Belt   |   |                            | Yes<br>Yes<br>Yes<br>No   | No<br>No<br>No<br>No   | P<br>P<br>P<br>P                                   | 9⅞<br>9⅞<br>9⅞   | C/R<br>C/R<br>C/R<br>R                         | 0-3<br>0-3<br>0-3   | Yes<br>Yes<br>Yes  | 4-9<br>4-9<br>4-9   | R<br>R<br>R                     | 17 x 4 x 15<br>17 x 4 x 15<br>17 x 4 x 15                             | 269.00<br>199.00<br>159.00<br>170.00  |  |  |  |  |  |
| ZARATHUSTRA<br>DESIGNS   | Series 4<br>Series 5  | B<br>B  | 0.02<br>0.01  | 82<br>82   | Belt<br>Belt   | 0.01  | 5                          | Yes<br>Yes  |  |  |  |  |   |  |   |                                 | 16 x 13½ x 4¾<br>19½ x 16½ x 7½                                       | 3000.00<br>5000.00  |  |  |  |  |  |

# Well Tempered Labs

## Meet the Whole Family

**Stability. Sound Technology.** The Well Tempered Lab has met the design challenges of analog playback systems through the realization of a simple concept—stability. Stability is the key to accurate performance in analog playback systems.

patented zero-clearance turntable

damped bearingless tonearm

of stability in the stylus-

in all three Well Tempered

combinations—The Classic, The

nature. Damping technology in the “springless” bases

isolated motor assemblies in all three models carry the design intent of stability to an even higher ideal.

**Breakthrough Design. Lasting Value.** The Well Tempered Classic Arm and Table provided a new benchmark for analog playback accuracy nearly four years ago. *International Audio Review* considered it a technological breakthrough and claimed it approached or exceeded the performance of turntables costing ten times the price or more. The Well Tempered Classic Arm and Table has continued to win the accolades

of the press and music lovers the world over. **Brilliantly**

**Simple. Modestly Priced.** A simpler, lighter version of the Well Tempered Classic, the Record Player possesses the same stabilizing technologies and therefore achieves performance levels that far exceed expectations. A staunch performer with

moving-iron or moving-magnet cartridges, this under \$1000 tonearm and turntable combination also stabilizes the most sophisticated moving-coils. **No Compromises. A New Benchmark.** Advances in

sound-damping materials and exotic machining have resulted in an ultimate Well Tempered Table and Arm—The Signature. The Signature employs all of the technologies of the

Classic, but provides even greater stability. The arm is more

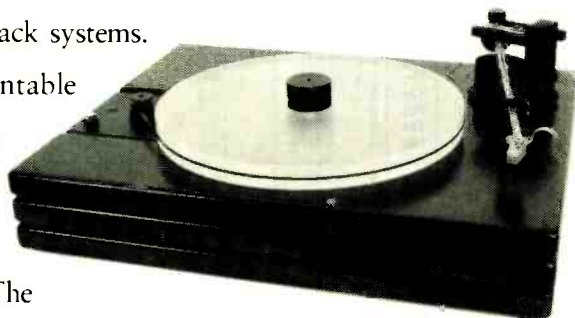
massive with refined control adjustments in damp-

ing, VTA and azimuth. A resonant-free base

and platter incorporate high tech and new-to-

the-market materials. The expression of Well Tempered

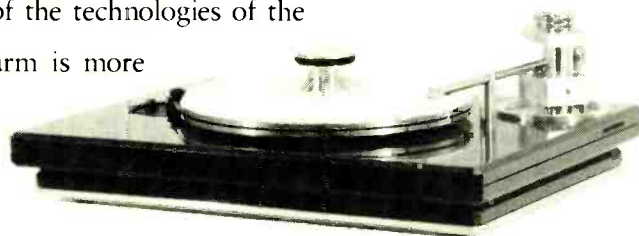
Lab's basic design principals in the Signature Arm and Table have resulted in an analog playback system of unparalleled beauty and performance.



**The Classic**



**The Record Player**



**The Signature**

### WELL TEMPERED LABS

*Design by Bill Firebaugh  
Manufactured & Distributed by Transparent Audio Marketing  
Rt. 202, Box 117, Hollis, ME 04042 (207) 929-4553*

Enter No. 96 on Reader Service Card



# TONEARMS

| MANUFACTURER              | Model                           | Type: Air-bearing = A, Pivoted = P,<br>Linear = L, Servo = S<br>Cartridge Mount: Fixed = F,<br>Removable Self-R. P-Mount = P,<br>Changeable Ward = W<br>Cueing?<br>Anti-Skating Adjustment?<br>Adjustable Vertical Tracking Angle?<br>Pivot-Stylus Distance, Inches<br>Overall Length, Inches<br>Maximum Tracking Error, Degrees per Inch<br>Range, Grams<br>Carriage Weight Range, Grams<br>Total Cable Capacitance, pF<br>Mounting Hole Diameter, Inches<br>Price, \$<br>Notes |             |                   |                   |                   |                 |                        |      |                         |                      |          |               |                                  |  |  |
|---------------------------|---------------------------------|--|-------------|-------------------|-------------------|-------------------|-----------------|------------------------|------|-------------------------|----------------------|----------|---------------|----------------------------------|--|--|
|                           |                                 | A/L  | W           | Yes               |                   | Yes               |                 |                        |      |                         | 0.5-3.0              | 5-14     |               |                                  | 3600.00  | Includes air pump; electronic cue; end-of-record lift. |
| AIR TANGENT               | Air Tangent                     | A/L  | W           | Yes               |                   | Yes               |                 |                        |      |                         | 0.5-3.0              | 5-14     |               |                                  | 3600.00  | Includes air pump; electronic cue; end-of-record lift. |
| ALPHASON                  | HR100MCS                        | P  | F           | Yes               | Yes               | Yes               | 8 3/4           | 11 3/4                 |      | 0-3                     | 3-20                 | 90       | 1 1/4         | 1000.00                          |  |  |
|                           | HR100S                          | P  | F           | Yes               | Yes               | Yes               | 8 3/4           | 11 3/4                 |      | 0-3                     | 3-20                 | 90       | 1 1/4         | 950.00                           |  |  |
|                           | Xenon MCS                       | P  | F           | Yes               | Yes               | Yes               | 9               | 11 3/4                 |      | 0-3                     | 3-20                 | 90       | 1 1/4         | 650.00                           |  |  |
|                           | Xenon                           | P  | F           | Yes               | Yes               | Yes               | 9               | 11 3/4                 |      | 0-3                     | 3-20                 | 90       | 1 1/4         | 600.00                           |  |  |
|                           | Delta                           | P  | F           | Yes               | Yes               | Yes               | 9               | 11 3/4                 |      | 3                       | 3-20                 | 90       | 1 1/4         | 450.00                           |  |  |
|                           | Opal                            | P  | F           | Yes               | Yes               | Yes               | 9               | 11 3/4                 |      | 3                       | 3-20                 | 90       | 1 1/4         | 375.00                           |  |  |
| AUDIOQUEST                | AQ PT-5                         | P  | F           | Yes               | Yes               | Yes               | 9               | 12                     |      | 0-3                     | 3-12                 | 71       | 1 1/4         | 350.00                           | Optional viscous damping. As above.  |  |
|                           | AQ PT-5+                        | P  | F           | Yes               | Yes               | Yes               | 9               | 12                     |      | 0-3                     | 3-12                 | 95       | 1 1/4         | 425.00                           |  |  |
| AUDIO-TECHNICA            | ATP-12T                         | P  | R           | No                | No                | †                 | 10 1/8          | 14 1/8                 | 1.55 | 1-3                     | 3-23                 | 300      | 7/8           | 275.00                           | †Built-in VTF gauge.   |  |
| BROADCAST ELECTRONICS     | S320                            | P  | R           | No                | No                | Yes               | 7 7/8           | 12 1/2                 | 1    | 1.0                     |                      |          | 7/8           | 175.00                           | For 16-inch platters.  |  |
|                           | S260                            | P  | R           | No                | No                | Yes               | 11 1/8          | 15 3/4                 | 1    | 1.0                     |                      |          | 7/8           | 195.00                           |  |  |
| DENNESEN                  | ABLT-1                          | A  | W           | Yes               |                   | Yes               | Adj.            | 12                     | 0    | Adj.                    | Any                  | 100      |               | 2000.00                          |  |  |
| EMINENT TECHNOLOGY        | Two                             | A  | W           | Yes               |                   | Yes               | 7 3/4           | 10 3/4                 | 0    | 0-5                     | 0-16                 | 22       |               | 950.00                           | Includes air pump; calibrated VTA adjustment; decoupled counterweight.   |  |
| GOLDMUND                  | T5                              | L/S  | R           | Yes               |                   | Yes               |                 |                        |      | 1-3                     | 4-20                 |          |               | 2195.00                          | Fully automatic; computer-controlled.  |  |
|                           | T3F(RO)                         | L/S  | R           | Yes               |                   | Yes               |                 |                        |      | 1-3                     | 4-25                 |          |               | 4750.00                          |  |  |
| GRAHAM ENGINEERING        | 1 Tonearm System                | P  | W           | Yes               | Yes               | Yes               | 9 1/4           | 11 5/8                 | 0.2  | 0-3.5                   | 4-20                 | 85       | 1 1/2         | 1776.00                          | SME-compatible mount; fluid-damped unipivot.   |  |
| HELIUS DESIGNS            | Scorpio III                     | P  | F           | Yes               | Yes               | No                | 0.9             | 11.1                   | 1.25 | 1-1.8                   | 5-12                 | 90       | 1             | 350.00                           | †Rectangular.  |  |
|                           | Aureus                          | P  | F           | Yes               | Yes               | No                | 0.9             | 11.1                   | 1.0  | 0.75-2.5                | 5-15                 | 70       | 1             | 600.00                           |  |  |
|                           | Orion                           | P  | F           | Yes               | Yes               | No                | 1.1             | 12.4                   | 0.75 | 0.5-3.0                 | 4-25                 | 62       | †             | 1300.00                          |  |  |
|                           | Cyalene                         | P  | F           | Yes               | Yes               | No                | 1.1             | 12.4                   | 0.75 | 0.5-2.8                 | 5-20                 |          |               | 2000.00                          |  |  |
| HEYBROOK                  | Heybrook Arm                    | P  | F           | Yes               | Yes               | Yes               |                 | 11 5/8                 |      | 0-3                     |                      |          |               | 549.00                           | Magnesium armtube.   |  |
| LINN HI-FI                | Ekos                            | P  | F           | Yes               | Yes               | No                | 9               | 11 1/4                 |      | 0.75-3.00               | 2-10                 |          | 1 1/4         | 1995.00                          |  |  |
|                           | Ittok                           | P  | F           | Yes               | Yes               | No                | 9               | 11 1/4                 |      | 0.75-3.00               | 2-10                 |          |               | 1095.00                          |  |  |
|                           | Basik Plus                      | P  | F           | Yes               | Yes               | No                | 9               | 11 1/4                 |      | 0.75-3.00               | 2-10                 |          | 1 1/4         | 295.00                           |  |  |
|                           | Akito                           | P  | F           | Yes               | Yes               | No                | 9               | 11 1/4                 |      | 0.75-3.00               | 2-10                 |          | 1 1/4         | 395.00                           |  |  |
| LIRPA LABS                | Lirpa IV-XXXI                   | A/L  | No          | 12                | 13                | 50                | Yes             | No                     | Yes  | No                      | Yes                  | No       | Yes           | 613.15                           | Includes sump pump; variable viscous damping.  |  |
| MANTICORE                 | Musician II<br>Musician S       | P<br>P   | F<br>F      | Yes<br>Yes        | Yes<br>Yes        | Yes<br>Yes        | 9 1/2<br>9 1/2  | 11 1/4<br>11 1/4       |      |                         |                      |          |               | 600.00<br>1000.00                |  |  |
| MAYWARE                   | Formula V                       | P  | F/R         | Yes               | Yes               | Yes               | 9               | 11 1/2                 | 0    | 0.75-3                  | 3-11                 | 100      | 3/4           |                                  | Variable viscous damping; variable effective mass.   |  |
| MEITNER AUDIO             | TA-2                            | P  | W           | Yes               | Yes               |                   |                 |                        |      | 1-3                     | 3-13                 |          |               | 300.00                           | Unipivot design.   |  |
| MØRCH                     | UP-4                            | P  | W           | Yes               | Yes               | Yes               | 9 1/8           | 11 3/4                 |      | 0.75-3                  | 3-15                 | 128      | 7/8           | †                                | †With copper wire, \$560.00; with silver wire, \$650.00. Choice of four armtubes; unipivot; viscous damping. Armtube choice and damping as above; dual bearings. |  |
|                           | DP-6                            | P  | W           | Yes               | Yes               | Yes               | 9 1/8           | 11 3/4                 |      | 0.75-3                  | 3-15                 | 128      | 7/8           | 960.00                           |  |  |
| NAIM AUDIO                | ARO                             | P  | F           | No                | Yes               | Yes               | 9               | 11 1/2                 |      |                         | 5.5-12               |          | 3/4           | 1395.00                          | Unipivot design.   |  |
| ORACLE                    | Alpha<br>Beta<br>Oracle/SME 345 | P<br>P<br>P  | F<br>F<br>R | Yes<br>Yes<br>Yes | Yes<br>Yes<br>Yes | Yes<br>Yes<br>Yes | 9<br>9<br>9 1/8 | 11 1/2<br>11 1/2<br>12 | 0.01 | 0-2.5<br>0-2.5<br>0-2.5 | 4-9<br>4-9<br>5-10   | 140      |               | 275.00<br>350.00<br>From 1395.00 |  |  |
| PREMIER                   | FT-3K                           | P  | F           | Yes               | Yes               | Yes               | 9 1/2           | 12                     | 0.2  | 0-3                     | 4-14                 |          | 3/4           | 395.00                           | Azimuth adjustable; damped tube; RCA connectors on interface box. As above; VTA lift base. Azimuth adjustable.   |  |
|                           | FT-4                            | P  | F           | Yes               | Yes               | Yes               | 9 1/2           | 12                     | 0.2  | 0-3                     | 4-14                 |          | 3/4           | 550.00                           |  |  |
| MMT                       | P                               | R  | Yes         | Yes               | Yes               | 9 1/2             | 12              | 0.2                    | 0-3  | 4-14                    | 86                   | 3/4      | 290.00        |                                  |  |  |
| REGA RESEARCH             | RB300                           | P  | F           | Yes               | Yes               | Yes               | 9 3/8           | 11 1/8                 | 1.5  | 0.5-3.0                 | 3-18                 | 200      | 1             | 299.00                           | Cast armtube; dynamically balanced; 9-gram effective mass.   |  |
| REVOLVER                  | Revolver<br>Revolver<br>Super   | P<br>P<br>P  | F<br>F<br>F | Yes<br>Yes<br>Yes | Yes<br>Yes<br>Yes | Yes<br>Yes<br>Yes | 9<br>9<br>9     | 11.2<br>11.2           |      | 0.75-3.00<br>0.75-3.5   | 2.0-10.0<br>1.0-12.0 | 45<br>45 | 1.2<br>1.2    | 200.00<br>450.00                 |  |  |
| ROKSAN                    | Artemiz                         | P  | F           | Yes               | Yes               | Yes               | 9.4             |                        |      |                         |                      |          |               | 1375.00                          |  |  |
| JEFF ROWLAND DESIGN GROUP | Complement                      | P  | F           | Yes               | Yes               | Yes               | 9.65            | 12.6                   | 1.5  | 0-3.5                   | 6-35                 |          | 1.5           | 2400.00                          |  |  |
| SIMPLYPHYSICS             | Aviator                         | A/L  | W           | Yes               |                   | Yes               | 4               | 4 3/4                  | 0    | 0.75-2.5                | 4-14                 |          | 1/4           | 695.00                           | Includes air tank and pump; optional auto lift, \$95.00.   |  |
| SME<br>(Continued)        | Series IV                       | P  | F           | Yes               | Yes               | Yes               | 9 3/8           | 11 1/8                 | 0.2  | 0-3                     | 4-18                 | 140      | 1 1/8 x 2 3/4 | 1500.00                          | Damped magnesium casting; ABEC-3 bearings; adjustable static tracking; optional fluid damping.   |  |

# TONEARMS

| MANUFACTURER      | Model                      | Type: Air-Bearing = A, Pivoted = P, Linear = L, Servo = S | Cantilever Mount: Fixed = F, Removable Shell = R, P-Mount = P, Creepable Wand = W | Cueing? | Anti-Skating Adjustment? | Adjustable Vertical Tracking Angle? | Pivot-Stylus Distance, Inches | Overall Length, Inches | Maximum Tracking Error, Degrees per Inch Range, Grams | Recommended Tracking Force, Grams | Cartridge Weight Range, Grams | Total Cable Capacitance, pF | Mounting Hole Diameter, Inches | Price, \$ | Notes   |
|-------------------|----------------------------|---|---|---------|--------------------------|-------------------------------------|-------------------------------|------------------------|---|-----------------------------------|-------------------------------|-----------------------------|--------------------------------|-----------|---|
| SME (Continued)   | Series V                   | P   | F   | Yes     | Yes                      | Yes                                 | 9 1/8                         | 11 1/8                 | 0.2   | 0-3                               | 4-18                          | 140                         | 1 1/8 x 2 3/4                  | 2250.00   | Casting as above; ABEC-7 bearings; adjustable dynamic and static tracking; fluid damping; VTA lift. Removable headshell; gold-plated phono plugs. |
|                   | 309                        | P   | F   | Yes     | Yes                      | Yes                                 | 9 1/8                         | 11 1/8                 | 0.5   | 0-3                               | 4-18                          | 140                         | 1 1/8 x 2 3/4                  | 950.00    |   |
| SOUTHER           | Tri-Quartz Improved (TQ-I) | L   | W   | Yes     |                          | Yes                                 | 2                             | 10                     | 0   | 0.5-3.0                           | 1-20                          |                             | (2) 1/4                        | 1295.00   | Tangential tracking.  |
| SYRINX            | PU 3 German                | P   | W   | Yes     | Yes                      | Yes                                 |                               |                        |   |                                   |                               |                             |                                | 1395.00   | Internally fixed headshell wire.  |
| SYSTEMDEK         | T/A1                       | P   | F   | Yes     | Yes                      | Yes                                 | 8 1/2                         | 10 1/2                 |   | 1.0-3.0                           |                               | 300                         | 1 1/4                          | 200.00    |   |
| TECHNICS          | EPA-250                    | P   | R/W   | Yes     | Yes                      | Yes                                 | 10                            | 12 1/2                 | 2   | 0-2                               | 3-12.5                        | 41.2                        | 2 1/2                          | 799.00    |   |
| TOWNSHEND AUDIO   | Excalibur                  | P   | F   | Yes     | Yes                      | Yes                                 | 8 1/4                         | 12                     | 1.75  | 0.75-10.0                         | 4-22                          | 250                         | 1                              | 1200.00   |   |
| WELL TEMPERED LAB | Well Tempered Arm 1        | P   | F   | No      | Yes                      | Yes                                 | 9                             | 11 3/8                 |   |                                   |                               |                             | 1/2                            | 825.00    | Variable viscous damping.   |
|                   | Well Tempered Arm 2        | P   | F   | No      | No                       | Yes                                 | 9                             | 11 3/8                 |   |                                   |                               |                             | 3/8                            | 525.00    | As above.   |
|                   | Well Tempered Arm 3        | P   | F   | Yes     | Yes                      | Yes                                 | 9                             | 11 3/8                 |   |                                   |                               |                             | 3 1/2                          |           | As above.   |
|                   |                            |   |   |         |                          |                                     |                               |                        |   |                                   |                               |                             |                                |           |   |
| WHEATON MUSIC     | Triplanar II Improved      | P   | F   | Yes     | Yes                      | Yes                                 | 9 3/4                         | 11 3/4                 | 0.03  | 1-3                               | 4-22                          |                             |                                | 1795.00   | Azimuth adjustable.   |
| WIN RESEARCH      | Pentograph                 | P   | F   | Yes     | Yes                      | Yes                                 | 12                            | 14                     | 0   | 1-5                               | 0-12                          | 42                          |                                | 1850.00   | Tangential tracking.  |
| ZETA              | Std.                       | P   | F   | Yes     | Yes                      | Yes                                 | 9                             | 11 1/2                 |   | 0.75-4                            | 4-12                          | 90                          | 1 1/4                          | 925.00    |   |
|                   | VdH                        | P   | F   | Yes     | Yes                      | Yes                                 | 9                             | 11 1/2                 |   | 0.75-4                            | 4-12                          | 90                          | 1 1/4                          | 1180.00   |   |

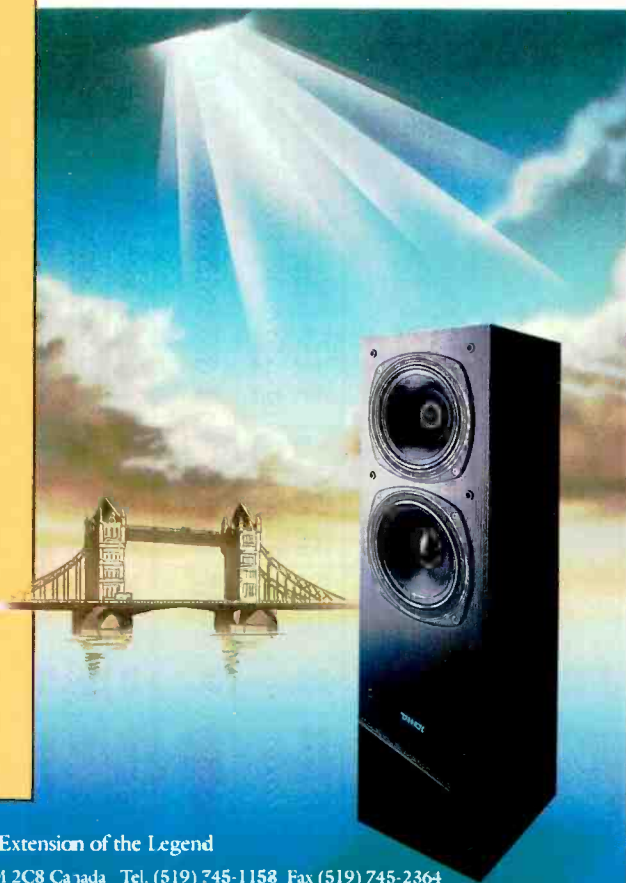
## Musical Truth

Some people settle for speakers which distort the truth a little, adding their own interpretation to the music.

Others insist on the most natural reproduction that art and technology can provide. For these refined tastes there is Tannoy Series 90.

The effortless accuracy and dynamics of Series 90 bear witness to Tannoy's 62-year heritage of engineering the industry's finest professional monitors. Tannoy monitors mastered the challenges of digital in the recording studio long before the advent of the Compact Disc. Having developed single-point-source driver technology to solve the problem of phase shift in studio playback, Tannoy has applied the single-point-source system here to create a stereo image so accurately natural it brings the concert experience home at last.

Find out why Tannoy is the only loudspeaker ever to be honoured with the recording industry's prestigious TEC award for outstanding achievement. It's a testament of Tannoy's dedication to the musical truth.



## TANNOY Series 90 An Extension of the Legend

Tannoy North America Inc. 300 Gage Avenue Unit 1, Kitchener, Ont. N2M 2C8 Canada Tel. (519) 745-1158 Fax (519) 745-2364



# PHONO CARTRIDGES

| STYLUS TYPE<br>C—Conical<br>S—Spherical<br>E—Elliptical<br>M—MicroLine,<br>MicroRidge, or similar<br>V—Van den Hul<br>X—Hyper-Elliptical,<br>Stereohedron, Fine Line,<br>Line Contact, Long Line,<br>Line Trace, or similar | MANUFACTURER              | Model                  | Frequency Response,<br>Hz to kHz, ±dB | Principle: Moving Iron = MI,<br>Induced Magnet = IM,<br>Moving Magnet = MM | Individual Response Curve Supplied? | Channel Separation, 1 kHz, dB | Channel Separation, 10 kHz, dB | Output, mV, 1 kHz,<br>5 cm/sec. rms Lateral Velocity | Recommended Tracking Force<br>Range, Grams | Recommended Load Capacitance, pF | Stylus Type—See Code | Stylus Radius (Radius), Mils | Dynamic Compliance, µm/mN,<br>Vertical/Lateral | Stylus Replacement:<br>User = U, Factory = F | Mounting: Integral Shell = I,<br>P-Mount = P, Standard = S | Weight, Grams | Price, \$ | Replacement<br>Stylus Price, \$ |
|---|---------------------------|------------------------|---------------------------------------|--|-------------------------------------|-------------------------------|--------------------------------|--|--|----------------------------------|----------------------|------------------------------|--|--|--|---------------|-----------|---------------------------------|
|   | ADCOM                     | HC-E II                | 20-20<br>+2.5, -1                     | MC   | No                                  | 22                            | 2.3                            | 1.6-2.0  |  | E                                | 0.3 x 0.7            |                              | F  | S  | 4.7  | 160.00        | 88.00     |                                 |
|   |                           | HP-E II                | 20-20<br>+2.5, -1                     | MC   | No                                  | 22                            | 2.3                            | 1.25   |  | E                                | 0.3 x 0.7            |                              | F  | P  | 4.7  | 160.00        | 88.00     |                                 |
|   |                           | HC-vdH II              | 20-20<br>+2.5, -1                     | MC   | No                                  | 22                            | 2.3                            | 1.6-2.0  |  | V                                | 0.2 x 2.8            |                              | F  | S  | 4.7  | 250.00        | 138.00    |                                 |
|   |                           | XC-LT II               | 20-20 ±1                              | MC   | No                                  | 25                            | 2.3                            | 1.6-2.0  |  | X                                | 0.15 x 1.5           |                              | F  | S  | 4.7  | 290.00        | 160.00    |                                 |
|   |                           | XC-MR II               | 20-20 ±1                              | MC   | No                                  | 25                            | 2.3                            | 1.6-2.0  |  | M                                | 0.15 x 3.0           |                              | F  | S  | 4.7  | 360.00        | 198.00    |                                 |
|   |                           | SXC-vdH                | 20-20 +3, -1                          | MC   | No                                  | 25                            | 2.3                            | 1.8  |  | V                                | 0.15 x 3.3           |                              | F  | S  | 4.7  | 500.00        | 275.00    |                                 |
|   | AKG                       | P-4                    | 20-20                                 | MI   | No                                  | 20                            | 1                              | 1-2  | 470  | E                                | 0.3 x 0.7            | 15/                          | U  | S  | 5.5  | 60.00         | 25.00     |                                 |
|   |                           | P-4DP                  | 20-20                                 | MI   | No                                  | 20                            | 1                              | 1-2  | 470  | E                                | 0.3 x 0.7            | 15/                          | U  | P  | 6  | 65.00         | 25.00     |                                 |
|   |                           | P-5ED                  | 20-20                                 | MI   | No                                  | 25                            | 1.65                           | 1.25-2   | 470  | E                                | 0.3 x 0.7            | 20/20                        | U  | S  | 4.8  | 80.00         | 40.00     |                                 |
|   |                           | P-8ES                  | 10-28                                 | MI   | Yes                                 | 30                            | 0.95                           | 1.2-1.6  | 470  | V                                |                      | 30/30                        | U  | S  | 4.8  | 450.00        | 270.00    |                                 |
|   |                           | Super Nova             |                                       |  |                                     |                               |                                |  |  |                                  |                      |                              |  |  |  |               |           |                                 |
|   |                           | P-10S                  | 20-20                                 | MI   | Yes                                 | 25                            | 1.65                           | 1.25-2   | 470  | E                                | 0.3 x 0.7            | 20/20                        | U  | S  | 4.8  | 125.00        | 60.00     |                                 |
|   |                           | P-10 Studio            | 20-20                                 | MI   | No                                  | 25                            | 1.3                            | 1.5-4  | 470  | E                                | 0.3 x 0.7            | 20/20                        | U  | S  | 4.8  | 130.00        | 60.00     |                                 |
|   |                           | P-15S                  | 10-25                                 | MI   | Yes                                 | 30                            | 0.95                           | 1.2-1.6  | 470  | E                                | 0.3 x 0.7            | 25/25                        | U  | S  | 4.8  | 175.00        | 82.50     |                                 |
|   |                           | P-25S                  | 10-28                                 | MI   | Yes                                 | 30                            | 0.95                           | 1.2-1.6  | 470  | X                                | 0.2 x 0.7            | 2/28                         | U  | S  | 4.8  | 250.00        | 150.00    |                                 |
|   |                           | P100LE                 |                                       | MI   |                                     | 30                            |                                | 1.35   | 475  | V                                |                      |                              | F  | S  | 3.5  | 1000.00       |           |                                 |
|   |                           | P100LE VDH             |                                       | MI   |                                     | 30                            |                                | 1.35   | 475  | V                                |                      |                              | F  | S  |  | 1000.00       |           |                                 |
|   | ARCAM                     | C77Mg                  | 20-20 ±3                              | MM   | No                                  | 20                            | 15                             | 4  | 1.6-2.2                                    | 200-400                          | S                    | 0.6                          | 20/20  | U  | S  | 6.2           | 79.95     | 24.95                           |
|   |                           | E77Mg                  | 20-20 ±2.5                            | MM   | No                                  | 20                            | 15                             | 4  | 1.6-2.0                                    | 200-400                          | E                    | 0.3 x 0.7                    | 20/20  | U  | S  | 6.2           | 119.95    | 59.95                           |
|   |                           | P77Mg                  | 20-20 ±2.5                            | MM   | No                                  | 20                            | 15                             | 4  | 1.6-2.2                                    | 200-400                          | X                    | 0.3 x 2.0                    | 20/20  | U  | S  | 6.2           | 149.95    | 89.95                           |
|   | ARGENT                    | Diamond                | 10-50                                 | MC   | Yes                                 | 30                            | 25                             | 0.2  | 1.8-2.2                                    | 100                              | X                    | 0.3 x 0.6                    | 8/8  | F  | S  | 8             | 1200.00   | 600.00                          |
|   |                           | MC-110                 | 10-50                                 | MC   | Yes                                 | 30                            | 25                             | 0.2  | 1.8-2.2                                    | 100                              | X                    | 0.3 x 0.6                    | 8/8  | F  | S  | 8             | 300.00    | 120.00                          |
|   |                           | MC-300                 | 10-40                                 | MC   | Yes                                 | 25                            | 20                             | 0.1  | 1.8-2.2                                    | 100                              | X                    | 0.3 x 0.6                    | 8/8  | F  | S  | 8             | 150.00    | 60.00                           |
|   |                           | MC-310                 | 10-40                                 | MC   | Yes                                 | 25                            | 20                             | 0.1  | 1.8-2.2                                    | 100                              | X                    | 0.3 x 0.7                    | 8/8  | F  | S  | 7             | 100.00    | 40.00                           |
|   |                           | MC-500H                | 10-40                                 | MC   | Yes                                 | 25                            | 20                             | 1.9  | 1.8-2.2                                    | 100                              | X                    | 0.3 x 0.6                    | 8/8  | F  | S  | 7             | 200.00    | 100.00                          |
|   |                           | MC-500HS               | 10-50                                 | MC   | Yes                                 | 25                            | 20                             | 1.9  | 1.8-2.2                                    | 100                              | X                    | 0.3 x 0.6                    | 8/8  | F  | S  | 7             | 260.00    | 130.00                          |
|   |                           | MC-500HR               | 10-50                                 | MC   | Yes                                 | 25                            | 20                             | 1.9  | 1.8-2.2                                    | 100                              | X                    | 0.3 x 0.6                    | 8/8  | F  | S  | 7             | 300.00    | 150.00                          |
|   | AUDIOQUEST                | AQ M-1                 | 15-30                                 | IM   | No                                  | 25                            | 20                             | 3.0  | 1.5  |                                  | E                    | 0.3 x 0.7                    |  | U  | S  |               | 95.00     | 40.00                           |
|   |                           | AQ MC-3                | 15-35                                 | MC   | No                                  | 25                            | 20                             | 2.5  | 2.0  |                                  | E                    | 0.3 x 0.7                    |  | U  | S  |               | 150.00    | 90.00                           |
|   |                           | AQ MC-4                | 10-40                                 | MC   | No                                  | 25                            | 20                             | 2.5  | 1.8  |                                  | E                    | 0.3 x 0.7                    |  | F  | S  | 4.5           | 250.00    | 160.00                          |
|   |                           | AQ MC-5                | 10-40                                 | MC   | No                                  | 30                            | 25                             | 1.4  | 1.8  |                                  | X                    | 0.3 x 1.6                    |  | F  | S  | 4.5           | 325.00    | 195.00                          |
|   |                           | AQ 404i-MH             | 10-50                                 | MC   | Yes                                 | 30                            | 25                             | 1.4  | 1.9  |                                  | X                    | 0.3 x 1.6                    |  | F  | S  | 8.1           | 550.00    | 360.00                          |
|   |                           | AQ 404i-L              | 10-50                                 | MC   | Yes                                 | 30                            | 25                             | 0.5  | 1.9  |                                  | X                    | 0.3 x 1.6                    |  | F  | S  | 8.1           | 550.00    | 360.00                          |
|   |                           | AQ B-200MH             | 10-50                                 | MC   | Yes                                 | 30                            | 25                             | 1.4  | 1.9  |                                  | X                    | 0.3 x 1.6                    |  | F  | S  | 9.2           | 850.00    | 560.00                          |
|   |                           | AQ B-200L              | 10-50                                 | MC   | Yes                                 | 30                            | 25                             | 0.5  | 1.9  |                                  | X                    | 0.3 x 1.6                    |  | F  | S  | 9.2           | 850.00    | 560.00                          |
|   |                           | AQ 7000                | 10-50                                 | MC   | No                                  | 30                            | 25                             | 0.3  | 1.9  |                                  | X                    |                              |  | F  | S  | 9.5           | 1295.00   | 895.00                          |
|   | AUDIO-TECHNICA            | AT201P                 | 20-22 ±1                              | MM   | No                                  | 26                            | 16                             | 5.0  | 1.0-1.5                                    | 100-200                          | C                    | 0.6                          |  | U  | P/S  |               | 55.00     | 25.00                           |
|   |                           | AT201EP                | 20-25 ±1                              | MM   | No                                  | 26                            | 17                             | 5.0  | 1.0-1.5                                    | 100-200                          | E                    | 0.4 x 0.7                    |  | U  | P/S  |               | 65.00     | 30.00                           |
|   |                           | AT211EP                | 15-25 ±1                              | MM   | No                                  | 29                            | 18                             | 5.0  | 1.0-1.5                                    | 100-200                          | E                    | 0.4 x 0.7                    |  | U  | P/S  |               | 75.00     | 35.00                           |
|   |                           | AT216EP                | 15-27 ±1                              | MM   | No                                  | 29                            | 20                             | 5.0  | 1.0-1.5                                    | 100-200                          | E                    | 0.3 x 0.7                    |  | U  | P/S  |               | 100.00    | 50.00                           |
|   |                           | AT221EP                | 10-28 ±1                              | MM   | No                                  | 31                            | 20                             | 5.0  | 1.0-1.5                                    | 100-200                          | E                    | 0.2 x 0.7                    |  | U  | P/S  |               | 135.00    | 70.00                           |
|   |                           | AT231LP                | 10-30 ±1                              | MM   | No                                  | 31                            | 21                             | 5.0  | 1.0-1.5                                    | 100-200                          | X                    |                              |  | U  | P/S  |               | 145.00    | 65.00                           |
|   |                           | AT132EP                | 10-30 ±1                              | MM   | No                                  | 30                            | 20                             | 5.0  | 1.0-1.5                                    | 100-200                          | E                    | 0.2 x 0.7                    |  | U  | P  |               | 150.00    | 65.00                           |
|   |                           | AT152MLP               | 5-35 ±1                               | MM   | No                                  | 31                            | 21                             | 5.0  | 1.0-1.5                                    | 100-200                          | M                    |                              |  | U  | P  |               | 250.00    | 120.00                          |
|   |                           | ATP-1                  | 20-20 ±1.5                            | MM   | No                                  | 21                            | 16                             | 5.0  | 3-5  | 100-200                          | C                    | 0.6                          |  | U  | S  | 7.2           | 45.00     | 25.00                           |
|   |                           | AT70                   | 20-20 ±1.5                            | MM   | No                                  | 20                            | 15                             | 3.5  | 1.5-2.5                                    | 100-200                          | C                    | 0.6                          |  | U  | S  |               | 45.00     | 25.00                           |
|   |                           | AT71E                  | 20-22 ±1.5                            | MM   | No                                  | 22                            | 17                             | 3.5  | 1-2  | 100-200                          | E                    | 0.4 x 0.7                    |  | U  | S  |               | 55.00     | 35.00                           |
|   |                           | AT105                  | 20-20 ±1                              | MM   | No                                  | 26                            | 16                             | 5.0  | 1.5-2.5                                    | 100-200                          | C                    | 0.6                          |  | U  | S  | 7.0           | 55.00     | 30.00                           |
|   |                           | AT110E                 | 20-22 ±1                              | MM   | No                                  | 26                            | 17                             | 5.0  | 1.0-2.0                                    | 100-200                          | E                    | 0.4 x 0.7                    |  | U  | S  | 7.0           | 70.00     | 35.00                           |
|   |                           | AT120 E/T              | 15-25 ±1                              | MM   | No                                  | 29                            | 20                             | 5.0  | 1.0-1.8                                    | 100-200                          | E                    | 0.3 x 0.7                    |  | U  | S  | 6.4           | 95.00     | 50.00                           |
|   |                           | AT125 LC/T             | 10-28 ±1                              | MM   | No                                  | 29                            | 20                             | 5.0  | 1.0-1.8                                    | 100-200                          | X                    |                              |  | U  | S  | 6.4           | 150.00    | 65.00                           |
|   |                           | AT130 E/T              | 10-30 ±1                              | MM   | No                                  | 30                            | 20                             | 5.0  | 0.8-1.8                                    | 100-200                          | E                    | 0.2 x 0.7                    |  | U  | S  | 6.4           | 135.00    | 55.00                           |
|   |                           | AT140ML                | 5-32 ±1                               | MM   | No                                  | 30                            | 20                             | 5.0  | 0.8-1.6                                    | 100-200                          | M                    |                              |  | U  | S  | 6.5           | 195.00    | 85.00                           |
|   |                           | ATML170                | 5-40 ±1                               | MM   | Yes                                 | 31                            | 21                             | 5.0  | 0.3-1.25                                   | 100-200                          | M                    |                              |  | U  | S  | 7.0           | 345.00    | 165.00                          |
|   |                           | ATP-2                  | 15-22 ±1.5                            | MM   | No                                  | 23                            | 17                             | 5.3  | 3-5  | 200                              | E                    | 0.4 x 0.7                    |  | U  | S  | 7.2           | 60.00     | 35.00                           |
|   |                           | ATP-2XN<br>(w/2 Styli) | 15-22 ±1.5                            | MM   | No                                  | 23                            | 17                             | 5.3  | 3-5  | 200                              | E                    | 0.4 x 0.7                    |  | U  | S  | 7.2           | 90.00     |                                 |
|   |                           | ATP-3                  | 15-25 ±1.5                            | MM   | No                                  | 23                            | 17                             | 5.3  | 2-3  | 200                              | E                    | 0.3 x 0.7                    |  | U  | S  | 7.2           | 80.00     | 50.00                           |
|   | A.V.A.                    | Longhorn Z             | 10-60 ±1.5                            | IM   | No                                  | 35                            | 30                             | 5.6  | 1.5-2.0                                    |                                  | E                    | 0.3 x 0.6                    |  | U/F  | S  | 8             | 99.00     | 45.00                           |
|   | BANG & OLUFSEN            | MMC 1                  | 20-20 ±1                              | MI   | Yes                                 | 30                            | 22                             | 2.12   | 1  | 200-400                          | X                    | 0.1 x 0.1                    | No   | I  | 1.6  | 490.00        |           |                                 |
|   |                           | MMC 2                  | 20-20 ±1.5                            | MI   | Yes                                 | 25                            | 20                             | 2.12   | 1  | 200-400                          | X                    | 0.12 x 0.12                  | No   | I  | 1.6  | 325.00        |           |                                 |
|   |                           | MMC 3                  | 20-20 ±2                              | MI   | Yes                                 | 25                            | 20                             | 2.12   | 1.2  | 200-400                          | E                    | 0.15 x 0.15                  | No   | I  | 1.6  | 215.00        |           |                                 |
|   |                           | MMC 4                  | 20-20 ±2.5                            | MI   | Yes                                 | 22                            | 17                             | 2.12   | 1.2  | 200-400                          | E                    | 0.2 x 0.2                    | No   | I  | 1.6  | 125.00        |           |                                 |
|   |                           | MMC 5                  | 20-20 ±3                              | MI   | Yes                                 | 20                            | 15                             | 2.12   | 1.5  | 200-400                          | E                    | 0.25 x 0.25                  | No   | I  | 1.6  | 70.00         |           |                                 |
|   | BENZ-MICRO                | MC-100                 | 15-25 ±0.5                            | MC   | Yes                                 |                               | 0.4                            | 1.6-2.0  |  | M                                |                      |                              | F  | S  | 7.5  | 800.00        | 400.00    |                                 |
|   |                           | MC-1 Super             | 15-25 ±0.5                            | MC   | Yes                                 |                               | 0.9                            | 1.6-2.0  |  | M                                |                      |                              | F  | S  | 7.5  | 1000.00       | 500.00    |                                 |
|   |                           | MC-2                   | 15-25 ±0.5                            | MC   | Yes                                 |                               | 2.0                            | 1.6-2.0  |  | M                                |                      |                              | F  | S  | 7.5  | 1200.00       | 600.00    |                                 |
|   |                           | MC-3                   | 10-50 ±0.5                            | MC   | Yes                                 |                               | 0.35                           | 1.85   |  | M                                |                      |                              | F  | S  | 7.2  | 1500.00       | 750.00    |                                 |
|   | CHADWICK<br>MODIFICATIONS | F-3 Super              | 18-21                                 | IM   | No                                  | 28                            | 24                             | 3.8  | 2  | E                                | 0.3 x 0.6            | 23/23                        | F  | S  | 5  | 95.00         | 60.00     |                                 |
|   |                           | X-5 Super              | 15-45                                 | MC   | No                                  | 30                            | 30                             | 2  | 2  | M                                |                      | 14/14                        | F  | S  | 4.8  | 300.00        | 165.00    |                                 |
|   | CLEARAUDIO                | Gamma STD              | 10-50                                 | MC   | Yes                                 | 28                            | 28                             | 0.6  | 1.8-2.2                                    | X                                | 0.2 x 1.6            | 15/15                        | F  | S  | 4.5  | 495.00        | 250.00    |                                 |
|   |                           | Delta STD              | 10-60                                 | MC   | Yes                                 | 30                            | 30                             | 0.6  | 1.8-2.2                                    | X                                | 0.2 x 1.6            | 15/15                        | F  | S  | 4.5  | 695.00        | 350.00    |                                 |
|   |                           | Veritas STD            | 10-60                                 | MC   | Yes                                 | 35                            | 35                             | 0.6  | 1.8-2.2                                    | X                                | 0.2 x 1.6            | 15/15                        | F  | S  | 4.5  | 895.00        | 450.00    |                                 |
|   |                           | Gamma-S                | 10-50                                 | MC   | Yes                                 | 28                            | 28                             | 0.6  | 1.8-2.2                                    | X                                | 0.2 x 1.6            | 15/15                        | F  | S  | 10.3   | 750.00        | 400.00    |                                 |
|   |                           | Delta-S                | 10-60                                 | MC   | Yes                                 | 30                            | 30                             | 0.6  | 1.8-2.2                                    | X                                | 0.2 x 1.6            | 15/15                        | F  | S  | 10.3   | 995.00        |           |                                 |

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| CLEARAUDIO<br>(Continued)   | Prädikat<br>Accurate<br>Insider  | 10-75<br>10-110<br>10-110  | MC<br>MC<br>MC   | Yes<br>Yes<br>Yes  | 40<br>40<br>45   | 40<br>40<br>45   | 0.6<br>0.7<br>0.7  | 1.8-2.2<br>1.8-2.2<br>1.8-2.2   |   | X<br>X<br>X  | 0.2 x 1.6<br>0.2 x 1.6<br>0.2 x 1.6   | 15/15<br>15/15<br>15/15   | F<br>F<br>F  | S<br>S<br>S   | 5.5<br>10<br>11.5  | 1650.00<br>2485.00<br>5350.00  | 850.00<br>1250.00<br>2700.00   |
| DECCA   | Gold   | 10-40 ±2   | MM   | No   | 30   | 25   | 3.5  | 1.5-2.0   | 220   | V  | 0.2 x 0.7   | 4/8   | F  | S   | 6  | 800.00   | 450.00   |
| DENDN   | DL-1000<br>DL-305<br>DL-304<br>DL-302<br>DL-301<br>DL-160<br>DL-110  | 20-110<br>20-75<br>20-75<br>20-70<br>20-60<br>20-50<br>20-46   | MC<br>MC<br>MC<br>MC<br>MC<br>MC<br>MC   |  | 30<br>28<br>28<br>28<br>28<br>28<br>25   |  | 0.12<br>0.2<br>0.18<br>0.25<br>0.3<br>1.6<br>1.6   | 0.7-0.9<br>1.0-1.4<br>1.0-1.4<br>1.2-1.6<br>1.2-1.6<br>1.5-2.1<br>1.5-2.1   |   |  |   | F<br>F<br>F<br>F<br>F<br>F<br>F   | S<br>S<br>S<br>S<br>S<br>S<br>S  | 6<br>5.8<br>5.8<br>6<br>4.7<br>4.8<br>4.8                               | 859.00<br>559.00<br>395.00<br>260.00<br>160.00<br>115.00<br>85.00                                | 516.00<br>336.00<br>237.00<br>155.00<br>96.00<br>69.00<br>51.00  |  |
| EMT   | XSD-15FL   | 20-30  | MC   | Yes  | 25   |  | 1.05   | 2.0-3.0   | 800   | X  |   | 15/15   | F  | I   | 21   | 675.00   | 260.00   |
| EPOCH   | HZ9S<br>LZ9E<br>LZ8S<br>HZ8S<br>HZ7S<br>HZ6E   | 10-30<br>10-50<br>10-40<br>10-30<br>10-25<br>10-22   | MM<br>MM<br>MM<br>MM<br>MM<br>MM   | Yes<br>Yes<br>No<br>No<br>No<br>No   | 35<br>35<br>35<br>35<br>32<br>32   | 22<br>22<br>22<br>22<br>20<br>15                                   | 4.0<br>0.2<br>0.2<br>0.2<br>4.0<br>4.0   | 0.75-1.5<br>0.75-1.5<br>0.75-1.5<br>0.75-1.5<br>0.75-1.5<br>0.75-1.5  | 275<br>275<br>275<br>275<br>275<br>275  | X<br>X<br>X<br>X<br>X<br>E   | 0.3 x 2.8<br>0.3 x 2.8<br>0.3 x 2.8<br>0.3 x 2.8<br>0.3 x 2.8<br>0.2 x 0.7  | 25/<br>25/<br>20/<br>20/<br>17/<br>15/  | U<br>U<br>U<br>U<br>U<br>U   | S<br>S<br>S<br>S<br>S<br>S  | 4<br>3.8<br>3.8<br>4<br>4<br>4   | 250.00<br>250.00<br>190.00<br>190.00<br>120.00<br>95.00  | 90.00<br>90.00<br>75.00<br>75.00<br>50.00<br>40.00   |
| GARROTT<br>BROTHERS   | K1<br>K2<br>K3<br>P66<br>P77<br>P86<br>P87<br>P88  | 20-20 ±2<br>20-20 ±2<br>20-20 ±2<br>20-20 ±2<br>20-20 ±2<br>20-25 ±2<br>20-25 ±2<br>20-25 ±2   | IM<br>IM<br>IM<br>IM<br>IM<br>MC<br>MC<br>MC   | No<br>No<br>No<br>No<br>No<br>No<br>No<br>No   | 30<br>30<br>30<br>30<br>30<br>35<br>35<br>35   | 25<br>25<br>25<br>25<br>25<br>30<br>30<br>30                       | 4.8<br>4.8<br>4.8<br>4.8<br>4.8<br>0.4<br>0.4<br>0.4   | 1.75<br>1.75<br>1.75<br>1.75<br>1.75<br>2<br>2<br>2   |   | E<br>E<br>E<br>E<br>E<br>M<br>M<br>M   |   | U<br>U<br>U<br>U<br>U<br>F<br>F<br>F  |  |   | 6<br>6<br>6<br>6<br>6<br>7<br>7<br>7   | 195.00<br>195.00<br>195.00<br>250.00<br>295.00<br>2000.00<br>2500.00<br>3000.00  | 140.00<br>140.00<br>140.00<br>170.00<br>220.00   |
| GOLDMUND  | Goldmund<br>Gold   |  | MC<br>MC   |  |  |  |  | 2-2.2<br>2-2.2  |   | X<br>X   |   | 7/7   |  | S<br>S  | 4.4<br>6.4   | 1095.00<br>1795.00   | 657.00<br>1077.00  |
| GOLDRING/<br>IMPORT AUDIO   | Elan<br>Epic II<br>G-1010<br>G-1010 78rpm<br>G-1020<br>G-1040<br>Eroica<br>Eroica L<br><br>Electro II<br>Electro IIA<br>Gerard Louis   | 20-18 ±3<br>20-20 ±2<br>20-20 ±2<br>20-20 ±2<br>20-22 ±3<br>20-22 ±3<br>20-22 ±3<br>20-22 ±3<br><br>20-22 ±3<br>20-22 ±3<br>20-22 ±3   | MM<br>MM<br>MM<br>MM<br>MM<br>MC<br>MC<br>MC<br><br>MC<br>MC<br>MC                               | No<br>No<br>No<br>No<br>No<br>Yes<br>Yes<br>Yes<br><br>Yes<br>Yes<br>Yes                         | 20<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br><br>25<br>25<br>25                         |  | 5.5<br>5.5<br>6.5<br>6.5<br>6.5<br>6.5<br>2.5<br>0.25<br><br>2.5<br>0.25<br>0.25               | 1.25-1.75<br>1.5-2.5<br>1.5-2.5<br>1.5-2.5<br>1.5-2.5<br>1.5-2.0<br>1.5-2.0<br><br>1.6-2.2<br>1.6-2.2<br>1.6-2.2                                  | 200<br>200<br>200<br>100-500<br>200-1000<br>100-500<br>100-500<br>100-500   | E<br>E<br>C<br><br>V<br>V<br>V<br>V<br>V<br>V<br>V                           | 0.3 x 0.7<br>2.5<br><br>VDH II<br>VDH I<br>VDH II<br>VDH II<br>VDH I<br>VDH I   | 16/16<br>24/24<br>16/24<br>16/24<br>18/18<br>18/18<br>18/18   | U<br>U<br>U<br>U<br>U<br>F<br>F<br>F<br>F<br>F<br>F<br>F                     | S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S                | 6.5<br>6.3<br>6.3<br>6.3<br>5.5<br>5.5<br>9<br>9<br>9<br>9<br>9<br>9<br>9                        | 50.00<br>80.00<br>110.00<br>110.00<br>150.00<br>220.00<br>260.00<br>260.00<br>440.00<br>440.00<br>1000.00  | 30.00<br>45.00<br>60.00<br>60.00<br>80.00<br>120.00<br>175.00<br>175.00<br>295.00<br>295.00<br>600.00  |
| GOLDRING/<br>MAY AUDIO MARKETING  | Excel<br>Gerard Louis<br>Electro II H<br>Electro II LZ<br>Eroica Low Out<br><br>Eroica H<br>G1042<br>1022<br>G1012<br>Epic II<br>Elan<br>G950E<br>G850E<br>G820DS<br>EAC DJ-E<br>Epic DJ | 20-30 ±2<br>20-22 ±3<br>20-22 ±3<br>20-22 ±3<br>20-22 ±3<br><br>20-22 ±3<br>20-22 ±3<br>20-20 ±3<br>20-20 ±2<br>20-18 ±3<br>20-20 ±3<br>20-18 ±3<br>20-18 ±3<br>20-18 ±3<br>20-18 ±3 | MC<br>MC<br>MC<br>MC<br>MC<br><br>MC<br>MM<br>MM<br>MM<br>MM<br>MM<br>MM<br>MM<br>MM<br>MM<br>MM | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br><br>Yes<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No | 25<br>25<br>25<br>25<br>25<br><br>25<br>25<br>25<br>25<br>20<br>20<br>20<br>20<br>20<br>20 |  | 0.5<br>0.5<br>2.5<br>0.25<br>0.25<br><br>2.5<br>6.5<br>5.5<br>5.5<br>6<br>8<br>5<br>5.5<br>5.5 | 1.5-2<br>1.6-2.2<br>1.6-2.2<br>1.6-2.2<br>1.5-2<br><br>1.5-2.0<br>1.5-2.5<br>1.5-2.5<br>1.25-1.75<br>1.5-3.0<br>1-3<br>2-3<br>1.5-5<br>2<br>1.5-5 | 100-500<br>100-500<br>100-500<br>100-500<br>200-1000<br>100-500<br>200<br>200<br>200<br>400<br>200-400<br>47-100<br>150-400<br>150-400<br>150-400 | V<br>V<br>V<br>V<br>V<br>V<br>V<br>V<br>V<br>S<br>S<br>S<br>S<br>S<br>S<br>S | VDH I<br>VDH I<br>VDH I<br>VDH I<br>VDH II<br>VDH II<br>VDH I<br>VDH I<br>VDH I<br>0.3 x 0.7<br>0.3 x 0.7<br>0.3 x 0.7<br>0.6<br>0.3 x 0.7<br>0.6 | 16/16<br>18/18<br>18/18<br>18/18<br>18/18<br>18/18<br>16/16<br>16/24<br>16/24<br>21/24<br>16/16<br>16/16<br>20/20<br>16/16<br>16/16 | F<br>F<br>F<br>F<br>F<br>F<br>F<br>U<br>U<br>U<br>U<br>U<br>U<br>U<br>U<br>U | S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S | 8.5<br>9<br>9<br>9<br>5.5<br><br>5.5<br>6.3<br>6.3<br>6.3<br>6.5<br>4.2<br>7<br>7<br>7<br>7<br>7 | 1200.00<br>1000.00<br>440.00<br>440.00<br>260.00<br>260.00<br>260.00<br>220.00<br>150.00<br>110.00<br>80.00<br>50.00<br>440.00<br>440.00<br>250.00 | 800.00<br>600.00<br>295.00<br>295.00<br>175.00<br>175.00<br>120.00<br>80.00<br>60.00<br>45.00<br>30.00 |
| GRACE   | F9 Ruby<br>F9E Classic   | 10-50 ±2<br>10-47 ±2   | MM<br>MM   | No<br>No   | 30<br>30   | 25<br>25   | 2.6<br>3.75  | 1.3-1.7<br>1.4-1.8  | 400<br>200  | E<br>E   |   | 20/20<br>20/20  | U<br>U   | S<br>S  | 6<br>6   | 395.00<br>250.00   | 250.00<br>125.00   |
| GRADO   | Z2 +<br>Z1 +<br>Z +<br>ZF1 +<br>ZF2 +<br>ZF3E +<br>ZCE + 1<br>ZTE + 1<br>ZCE +<br>ZTE +  | 10-60<br>10-60<br>10-55<br>10-55<br>10-55<br>10-55<br>10-50<br>10-50<br>10-50<br>10-50   | MI<br>MI<br>MI<br>MI<br>MI<br>MI<br>MI<br>MI<br>MI<br>MI   | No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No   | 25<br>25<br>25<br>25<br>25<br>25<br>20<br>20<br>20<br>20                                   | 1.4<br>1.4<br>4.0<br>4.0<br>4.0<br>4.0<br>4.0<br>4.0<br>4.0<br>4.0 | 1.5<br>1.5<br>1-2<br>1-2<br>1-2<br>1-2<br>1-2<br>1-2<br>2-3<br>2-3                             |   |   | E<br>E<br>E<br>E<br>E<br>E<br>E<br>E<br>E<br>E                               |   | U<br>U<br>U<br>U<br>U<br>U<br>U<br>U<br>U<br>U  | P/S<br>P/S<br>P/S<br>P/S<br>P/S<br>P/S<br>P/S<br>P/S<br>S<br>S               | 5.5<br>5.5<br>5.5<br>5.5<br>5.5<br>5.5<br>5.5<br>5.5<br>5.5<br>5.5      | 265.00<br>180.00<br>130.00<br>110.00<br>86.00<br>69.00<br>55.00<br>25.00<br>45.00<br>30.00       | 110.00<br>75.00<br>55.00<br>45.00<br>36.00<br>33.00<br>30.00<br>17.00<br>28.00<br>21.00  |  |
| JOSEPH GRADO<br>SIGNATURE   | XTZ<br>TLZ<br>MCZ<br>8MZ   |  | Flux<br>Bridge<br>Flux<br>Bridge<br>Flux<br>Bridge<br>Flux<br>Bridge                             | No<br>No<br>No<br>No   | 35<br>35<br>35<br>35   | 20<br>20<br>20<br>20   | 2.2<br>2.2<br>2.2<br>5   | 1.5<br>1.5<br>1.5<br>1.5  |   |  | 0.15 x 0.9<br>0.15 x 0.9<br>0.2 x 0.2<br>0.2 x 0.2  |   | U<br>U<br>U<br>U   | S<br>S<br>S<br>S  | 5<br>5<br>5<br>5   | 750.00<br>500.00<br>300.00<br>200.00   | 375.00<br>250.00<br>150.00<br>100.00   |



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# ZAPCHORD

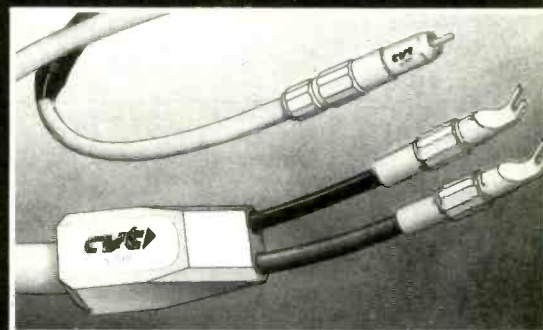
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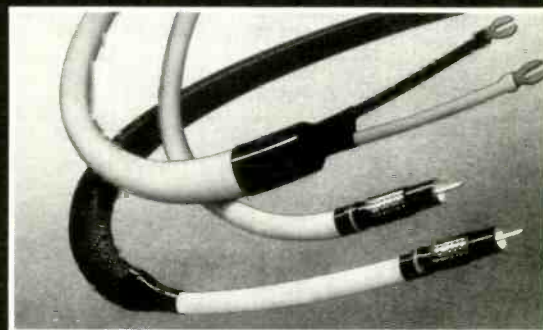
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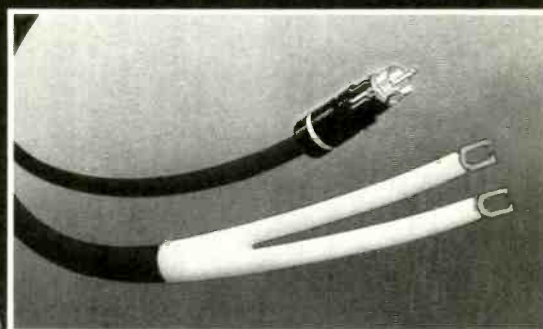


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# PHONO CARTRIDGES

| STYLUS TYPE<br>C—Conical<br>S—Spherical<br>E—Elliptical<br>M—MicroLine,<br>MicroRidge, or similar<br>V—Van den Hul<br>X—Hyper-Elliptical,<br>Stereohedron, Fine Line,<br>Line Contact, Long Line,<br>Line Trace, or similar | Model                    | Frequency Response,<br>Hz to kHz, $\pm$ dB | Principal Moving Coil = MC,<br>Induced Magnet = IM, Moving Coil = MC,<br>Moving Magnet = MM | Individual Response Curve Supplier? | Channel Separation, 1 kHz, dB | Channel Separation, 10 kHz, dB | Output, mV, 1 kHz,<br>5 cm/sec., rms Lateral Velocity | Recommended Tracking Force<br>Range, Grams | Recommended Load Capacitance, pF | Stylus Type—See Code | Stylus Radius (Radii), Mills | Dynamic Compliance,<br>Vertical/Lateral, $\mu$ m/mN | Stylus Replacement:<br>User = U, Factory = F | Mounting: Integral Shell = I,<br>P-Mount = P, Standard = S | Weight, Grams | Price, \$ | Replacement<br>Stylus Price, \$ |
|---|--------------------------|--|---|-------------------------------------|-------------------------------|--------------------------------|---|--|----------------------------------|----------------------|------------------------------|---|--|--|---------------|-----------|---------------------------------|
| KISEKI  | Lapis Lazuli             | 20-50                                      | MC  |                                     |                               | 0.4                            |   |  |                                  | X                    |                              |   |  |  |               |           |                                 |
|   | Agate Ruby               | 20-50                                      | MC  | Yes                                 | 30                            | 25                             | 0.4   | 2.0  |                                  | X                    | 0.14 x 0.6                   | 8/8   | F  | S  | 11            | 5600.00   | 3100.00                         |
|   | Purple Heart             |  | MC  | Yes                                 | 30                            | 25                             | 0.4   | 2.0  |                                  | X                    | 0.14 x 0.6                   | 8/8   | F  | S  | 11            | 1250.00   | 850.00                          |
|   | Sapphire                 |  | MC  | Yes                                 | 30                            | 25                             | 0.4   | 2.0  |                                  | X                    | 0.14 x 0.6                   | 8/8   | F  | S  | 11            | 975.00    | 680.00                          |
| KOETSU  | Blue Gold                | 20-50                                      | MC  | Yes                                 | 30                            | 25                             | 0.4   | 2.0  |                                  | X                    | 0.3 x 0.7                    | 10/10   | F  | S  | 11            | 600.00    | 360.00                          |
|   | EMC-Black Goldline       | 15-45 $\pm$ 2                              | MC  |                                     | 25                            |                                |   | 1.6-1.95                                   |                                  | X                    |                              |   | U  | S  |               | 795.00    | 575.00                          |
|   | EMC-Rosewood             | 10-50 $\pm$ 2                              | MC  |                                     | 30                            |                                |   | 1.6-2.0                                    |                                  | X                    |                              |   | U  | S  |               | 1250.00   | 700.00                          |
|   | EMC-Rosewood Sig.        | 10-50 $\pm$ 2                              | MC  |                                     | 35                            |                                |   | 1.5-2.0                                    |                                  | X                    |                              |   | U  | S  |               | 1950.00   | 1200.00                         |
| KRELL   | KC-100                   |  | MC  | No                                  | 25                            | 25                             | 0.25  | 1.75-2.00                                  |                                  | X                    |                              |   | F  | S  | 13            | 800.00    |                                 |
|   | KC-200                   |  | MC  | No                                  | 25                            | 25                             | 0.25  | 1.75-2.00                                  |                                  | X                    |                              |   | F  | S  | 13            | 1100.00   |                                 |
| LINN HI-FI  | Basik III                |  | MM  | No                                  |                               |                                |   | 1.8  |                                  | S                    |                              |   |  |  | 5             | 75.00     | 45.00                           |
|   | K5                       |  | MM  | No                                  |                               |                                |   | 1.7  |                                  | E                    | 0.2 x 0.8                    |   | U  | S  | 5.5           | 150.00    | 90.00                           |
|   | K9                       |  | MM  | No                                  |                               |                                |   | 1.7  |                                  | E                    | 0.2 x 0.8                    |   | U  | S  | 5.5           | 275.00    | 165.00                          |
|   | K18                      |  | MM  | No                                  |                               |                                |   | 1.7  |                                  | E                    | 0.2 x 0.8                    |   | U  | S  | 6.0           | 450.00    | 270.00                          |
|   | Asaka                    |  | MC  | No                                  |                               |                                |   | 1.7  |                                  | E                    | 0.2 x 0.8                    |   | F  | S  | 6.0           | 795.00    | 530.00                          |
|   | Karma                    |  | MC  | No                                  |                               |                                |   | 1.7  |                                  | E                    | 0.2 x 0.8                    |   | F  | S  | 6.0           | 1225.00   | 816.67                          |
|   | Troika                   |  | MC  | No                                  |                               |                                |   | 1.7  |                                  | E                    | 0.2 x 0.8                    |   | F  | S  | 6.0           | 1750.00   | 1166.67                         |
|   |                          |  | MC  | No                                  |                               |                                |   | 1.7  |                                  | E                    | 0.2 x 0.8                    |   | F  | S  | 6.0           | 1750.00   | 1166.67                         |
| MADRIGAL  | Carnegie II              |  | MC  | Yes                                 | 35                            | 25                             | 0.35  | 1.6-2.0                                    |                                  | M                    | 0.4 x 8                      | 15/15   | F  | S  | 9             | 850.00    | 750.00                          |
| JOHN MAROVSKIS  | JMAS MIT-1               | 10-10 $\pm$ 1.0                            | MC  | No                                  | 25                            | 20                             | 0.25  | 2.25-2.5                                   | 500                              | V                    | 0.2 x Line                   | /16   | F  | S  | 5.5           | 550.00    | 275.00                          |
| MAYWARE   | MC-7V-III                | 10-50 $\pm$ 1                              | MC  | Yes                                 | 30                            |                                | 0.25  | 1.75                                       |                                  | X                    | 0.2 x 0.8                    |   | F  | S  | 4.8           |           |                                 |
|   | MC-7V-III                | 10-50 $\pm$ 1                              | MC  | Yes                                 | 30                            |                                | 2.5   | 1.75                                       |                                  | X                    | 0.2 x 0.8                    |   | F  | S  | 4.8           |           |                                 |
| MONSTER CABLE   | Alpha Genesis 1000 Mk.II | 20-20 $\pm$ 1                              | MC  |                                     | 30                            |                                | 0.2   | 1.5-2.0                                    |                                  |                      |                              | 12/15   |  |  | 4.2           | 800.00    |                                 |
|   | Alpha Genesis 500        | 20-20 $\pm$ 1                              | MC  |                                     | 30                            |                                | 0.2   | 1.5-2.0                                    |                                  |                      |                              | 12/15   |  |  | 4.2           | 500.00    |                                 |
|   | Sigma Genesis 2000       | 20-20 $\pm$ 1                              | IM  |                                     | 30                            |                                | 0.2   | 1.5-2.5                                    |                                  | M                    | 0.3 x 6.0                    | 12/15   |  |  | 4.2           | 1250.00   |                                 |
| MUSIC HALL  | AT-F5 Bullet             | 15-50                                      | MC  | No                                  | 27                            |                                | 0.3   | 1.25-1.75                                  |                                  | E                    |                              | 9/10  | F  | S  | 5.0           | 325.00    | 225.00                          |
|   | (Modified AT-95E)        | 20-20                                      | MI  | No                                  | 20                            |                                | 3.5   | 1.5-2.5                                    | 100-200                          | E                    | 0.4 x 0.7                    |   | F  | S  | 5.7           | 125.00    | 85.00                           |
| MUSIC & SOUND   | Econocoll                | 20-40 $\pm$ 2                              | MC  | No                                  | 25                            | 20                             | 2.0   | 1.5-1.8                                    |                                  | E                    | 0.3 x 0.7                    | 8.5/  | F  | S  | 4.5           | 199.00    | 130.00                          |
| ORTOFON   | MC3000MII                | 5-55 +3,-1                                 | MC  | No                                  | 25                            |                                | 0.15  | 1.7-2.2                                    |                                  | X                    |                              | 13/13   | F  | S  |               | 1500.00   | 800.00                          |
|   | MC1000                   | 10-50 +3,-1                                | MC  | No                                  | 25                            |                                | 0.15  | 1.7-2.2                                    |                                  | X                    |                              | 13/13   | F  | S  |               | 1000.00   | 500.00                          |
|   | MC30 Super II            | 20-40 +4,-1                                | MC  | No                                  | 25                            |                                | 0.25  | 1.6-2.0                                    |                                  | X                    |                              | 16/16   | F  | S  | 10            | 600.00    | 300.00                          |
|   | MC20 Super               | 10-50 +3,-1                                | MC  | No                                  | 25                            |                                | 0.25  | 1.5-1.9                                    |                                  | X                    |                              | 17/17   | F  | S  | 9             | 300.00    | 175.00                          |
|   | MC10 Super               | 10-30 +5,-1                                | MC  | No                                  | 25                            |                                | 0.3   | 1.3-1.8                                    |                                  | X                    |                              | 14/14   | F  | S  | 9             | 100.00    | 75.00                           |
|   | HMC30                    | 20-40 +4,-1                                | MC  | No                                  | 27                            |                                | 0.5   | 1.8-2.2                                    |                                  | X                    |                              | 14/14   | F  | S  | 10            | 500.00    | 250.00                          |
|   | HMC20                    | 20-30 +4,-1                                | MC  | No                                  | 26                            |                                | 0.5   | 1.8-2.2                                    |                                  | X                    |                              | 14/14   | F  | S  | 10            | 400.00    | 200.00                          |
|   | HMC10                    | 20-25 +4,-1                                | MC  | No                                  | 24                            |                                | 0.5   | 1.8-2.2                                    |                                  | E                    |                              | 14/14   | F  | S  | 10            | 350.00    | 175.00                          |
|   | MC3 Turbo                | 20-40 +3,-1                                | MC  | No                                  |                               |                                | 3.3   | 1.8-2.2                                    |                                  | X                    |                              | 13/13   | F  | S  | 5             | 200.00    | 100.00                          |
|   | MC1 Turbo                | 20-30 +3,-1                                | MC  | No                                  |                               |                                | 3.3   | 1.8-2.2                                    |                                  | E                    |                              | 13/13   | F  | S  | 5             | 150.00    | 75.00                           |
|   | X5 MC                    | 15-35 +4,-1                                | MC  | No                                  |                               |                                | 2.2   | 1.7-2.2                                    |                                  | X                    |                              | 12/12   | F  | S  | 5             | 300.00    | 150.00                          |
|   | X3 MC                    | 20-40 +3,-1                                | MC  | No                                  |                               |                                | 2.2   | 1.7-2.2                                    |                                  | X                    |                              | 13/13   | F  | P/S  | 5             | 200.00    | 87.50                           |
|   | X1 MC                    | 20-30 +3,-1                                | MC  | No                                  |                               |                                | 2.2   | 1.7-2.2                                    |                                  | X                    |                              | 13/13   | F  | P/S  | 5             | 100.00    | 50.00                           |
|   | 540                      | 18-27 +3,-1                                | MM  | No                                  | 25                            |                                | 3   | 1.25-1.5                                   |                                  | X                    |                              | 30/30   | U  | P/S  | 5             | 300.00    | 150.00                          |
|   | 530                      | 20-25 +3,-1                                | MM  | No                                  | 25                            |                                | 3   | 1.25-1.5                                   |                                  | X                    |                              | 30/30   | U  | P/S  | 5             | 225.00    | 120.00                          |
|   | 520                      | 20-23 +3,-1                                | MM  | No                                  | 25                            |                                | 3   | 1.25-1.5                                   |                                  | E                    |                              | 25/25   | U  | P/S  | 5             | 150.00    | 75.00                           |
|   | 510                      | 20-20                                      | MM  | No                                  | 25                            |                                | 3   | 1.25-1.5                                   |                                  | E                    |                              | 25/25   | U  | P/S  | 5             | 75.00     | 40.00                           |
|   | OM40                     | 20-29 +3,-1                                | MM  | No                                  | 25                            |                                | 3.5   | 1.0-1.5                                    | 300                              |                      |                              | 45/45   | U  | S  | 5             | 300.00    | 150.00                          |
|   | OM30 Super               | 20-20 +2,-0                                | MM  | No                                  | 25                            |                                | 4   | 1.0-1.5                                    | 300                              | X                    | 0.40 x 0.8                   | 40/35   | U  | P/S  | 5             | 225.00    | 90.00                           |
|   | OM20 Super               | 20-20 +2,-1                                | MM  | No                                  | 25                            |                                | 4   | 1.0-1.5                                    | 300                              | E                    | 0.18 x 0.8                   | 35/30   | U  | P/S  | 5             | 150.00    | 60.00                           |
|   | OM10 Super               | 20-20 +3,-1                                | MM  | No                                  | 22                            |                                | 4   | 1.25-1.75                                  | 300                              | E                    | 0.18 x 0.8                   | 30/25   | U  | P/S  | 5             | 75.00     | 30.00                           |
|   | OM5E                     | 20-20                                      | MM  | No                                  | 22                            |                                | 4   | 1.25-1.75                                  | 300                              | E                    |                              | 25/25   | U  | P/S  | 5             | 50.00     | 20.00                           |
|   |                          | +3,-1.5                                    |   |                                     |                               |                                |   |  |                                  |                      |                              |   |  |  |               |           |                                 |
|   | OM3E                     | 20-20 +3,-2                                | MM  | No                                  | 20                            |                                | 4   | 1.25-1.75                                  | 300                              | E                    |                              | 25/25   | U  | P/S  | 5             | 35.00     | 12.00                           |
|   | TM20UD                   | 20-20 +3,-1                                | MM  | No                                  | 25                            |                                | 3.5   | 1.0-1.5                                    | 400                              | X                    |                              | 35/35   | U  | P/S  | 6             | 129.00    | 75.00                           |
|   | TM14U                    | 20-20                                      | MM  | No                                  | 20                            |                                | 4.5   | 1.0-1.5                                    | 400                              | E                    |                              | 30/30   | U  | P/S  | 6             | 89.00     | 30.00                           |
|   | TM7                      | 20-20                                      | MM  | No                                  | 20                            |                                | 5   | 1.0-1.5                                    | 400                              | E                    |                              | 30/30   | U  | P/S  | 6             | 60.00     | 25.00                           |
| PICKERING   | XLZ/7500S                | 10-50                                      | MM  | No                                  | 35                            |                                | 0.33  | 0.75-1.5                                   |                                  | X                    | 0.3 x 2.8                    | 30/   | U  | S  | 5             | 275.00    | 90.00                           |
|   | XSV/5000                 | 10-50                                      | MM  | No                                  | 35                            |                                | 3.8   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    |   | U  | S  | 5.6           | 275.00    | 80.00                           |
|   | XSV/4000                 | 10-36                                      | MM  | No                                  | 35                            |                                | 3.8   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    | 30/   | U  | S  | 5.6           | 200.00    | 56.00                           |
|   | XSV/3000                 | 10-30                                      | MM  | No                                  | 35                            |                                | 3.8   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    | 30/   | U  | S  | 5.6           | 130.00    | 49.95                           |
|   | TLZ/7500S                | 10-50                                      | MM  | No                                  | 35                            |                                | 0.33  | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    |   | U  | P/S  | 5.9           | 275.00    | 90.00                           |
|   | XSP/4004                 | 10-36                                      | MM  | No                                  | 35                            |                                | 3.8   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    | 30/30   | U  | P/S  | 5.9           | 200.00    | 56.00                           |
|   | XSP/3003                 | 10-30                                      | MM  | No                                  | 35                            |                                | 5.0   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    | 30/30   | U  | P/S  | 5.9           | 130.00    | 49.95                           |
|   | TL-4 Super               | 10-25                                      | IM  | No                                  | 35                            |                                | 4.4   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    | 15/15   | U  | P/S  | 5.9           | 170.00    | 45.00                           |
|   | TL-3S                    | 10-25                                      | IM  | No                                  | 35                            |                                | 4.4   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    |   | U  | P/S  | 5.9           | 140.00    | 40.00                           |
|   | TL-2S                    | 10-22                                      | IM  | No                                  | 35                            |                                | 4.4   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                    |   | U  | P/S  | 5.9           | 110.00    | 36.00                           |
|   | TL-2E                    | 10-22                                      | IM  | No                                  | 35                            |                                | 4.4   | 0.75-1.5                                   | 275                              | E                    | 0.3 x 0.7                    |   | U  | P/S  | 5.9           | 95.00     | 29.50                           |
|   | TL-1                     | 10-20                                      | IM  | No                                  | 32                            |                                | 4.4   | 0.75-1.5                                   | 275                              | E                    | 0.3 x 0.7                    |   | U  | P/S  | 6             | 85.00     | 24.50                           |
|   | TL-Type 2                | 10-20                                      | MM  | No                                  | 28                            |                                | 3.0   | 1-1.5                                      | 275                              | E                    | 0.3 x 0.7                    |   | U  | P/S  | 6             | 60.00     | 22.50                           |
|   | TLE                      | 10-20                                      | MM  | No                                  | 28                            |                                | 4.4   | 1-1.5                                      | 275                              | E                    | 0.3 x 0.7                    |   | U  | P/S  | 6             | 55.00     | 20.00                           |
|   | XV-15/625E               | 10-25                                      | IM  | No                                  | 35                            |                                | 4.4   | 0.75-1.5                                   | 275                              | E                    | 0.3 x 0.7                    |   | U  | S  | 6.3           | 110.00    | 30.00                           |
|   | XV-15/400E               | 10-25                                      | IM  | No                                  | 35                            |                                | 4.4   | 1-2  | 275                              | E                    | 0.4 x 0.7                    |   | U  | S  | 6.3           | 95.00     | 28.50                           |
|   | V-15 Series IIe          | 10-18                                      | IM  | No                                  | 22                            |                                | 3.5   | 1-2  | 275                              | E                    | 0.3 x 0.7                    |   | U  | P/S  | 8.5           | 50.00     | 16.50                           |
|   | TL-6250J                 | 20-20                                      | IM  | No                                  | 30                            |                                | 4.4   | 3.5-4                                      | 275                              | E                    | 0.4 x 0.7                    |   | U  | P/S  | 8.5           | 82.00     | 30.00                           |

(Continued)

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# PHONO CARTRIDGES

| STYLUS TYPE<br>C—Conical<br>S—Spherical<br>E—Elliptical<br>M—MicroLine,<br>MicroRidge, or similar<br>V—Van den Hul<br>X—Hyper-Elliptical,<br>Stereohedron, Fine Line,<br>Line Contact, Long Line,<br>Line Trace, or similar |  | Model           | Frequency Response,<br>Hz to kHz, $\pm$ dB | Principle: Moving Iron: MI<br>Induced Magnet: IM<br>Moving Magnet: MM |                                |                                     | Individual Response Curve Supplied? | Channel Separation, 1 kHz, dB | Channel Separation, 10 kHz, dB | Output, mV, 1 kHz,<br>5 cm/sec. rms | Recommended Lateral Velocity<br>Range, Grams | Recommended Tracking Force | Stylus Type—See Code | Stylus Radius (Radius), Mils | Dynamic Compliance,<br>Vertical/Lateral, $\mu$ m/mm | Stylus Replacement:<br>User = U, Factory = F | Mounting: Integral Shell = I,<br>P-Mount = P, Standard = S | Weight, Grams | Price, \$ | Replacement<br>Stylus<br>Price, \$ |
|---|--|-----------------|--|---|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------|--------------------------------|-------------------------------------|--|----------------------------|----------------------|------------------------------|---|--|--|---------------|-----------|------------------------------------|
| MANUFACTURER  | Principal Moving Iron: MI<br>Induced Magnet: IM<br>Moving Magnet: MM |                 |  | Channel Separation, 1 kHz, dB   | Channel Separation, 10 kHz, dB | Output, mV, 1 kHz,<br>5 cm/sec. rms |                                     |                               |                                |                                     |  |                            |                      |                              |   |  |  |               |           |                                    |
| PICKERING<br>(Continued)  | XV-15/150DJ  | 10-20           | IM   | No  | 28                             |                                     |                                     | 8.0                           | 2-4                            | 275                                 | S  | 0.7                        |                      |                              | U   | S  | 6.3  | 79.00         | 16.50     |                                    |
|   | XV-15/150DJP<br>(w/2 Styli)  | 10-20           | IM   | No  | 28                             |                                     |                                     | 8.0                           | 2-4                            | 275                                 | S  | 0.7                        |                      |                              | U   | S  | 6.3  | 99.00         | 12.85     |                                    |
|   | V-15/DJ  | 20-20           | IM   | No  | 30                             |                                     |                                     | 4.4                           | 2-5                            | 275                                 | S  | 0.7                        |                      |                              | U   | S  | 5.5  | 43.00         | 34.75     |                                    |
|   | V15-DJ-DP  | 20-20           | IM   | No  | 30                             |                                     |                                     | 4.4                           | 2-5                            | 275                                 | S  | 0.7                        |                      |                              | U   | S  | 5.5  | 86.00         | 34.75     |                                    |
|   | XV-15 625DJ  | 20-20           | IM   | No  | 30                             |                                     |                                     | 4.4                           | 1-4                            | 275                                 | E  | 0.3 x 0.7                  |                      |                              | U   | S  | 5.5  | 82.00         | 30.00     |                                    |
|   | XV-15/200E   | 10-20           | IM   | No  | 35                             |                                     |                                     | 4.4                           | 0.75-1.5                       | 275                                 | E  | 0.2 x 0.7                  |                      |                              | U   | S  | 6.3  | 170.00        | 35.00     |                                    |
|   | XV-15 757S   | 15-25           | IM   | No  | 35                             |                                     |                                     | 4.4                           | 0.75-1.5                       | 275                                 | X  | 0.3 x 2.8                  |                      |                              | U   | S  | 6.3  | 140.00        | 43.75     |                                    |
|   | XV-15/625E   | 10-25           | IM   | No  | 35                             |                                     |                                     | 4.4                           | 0.75-1.5                       | 275                                 | E  | 0.3 x 0.7                  |                      |                              | U   | S  | 6.3  | 110.00        | 30.00     |                                    |
|   | XV-15/400E   | 10-25           | IM   | No  | 35                             |                                     |                                     | 4.4                           | 1-2                            | 275                                 | E  | 0.4 x 0.7                  |                      |                              | U   | S  | 6.3  | 95.00         | 28.50     |                                    |
|   | V15 Series IIs   | 10-25           | MM   | No  | 25                             |                                     |                                     | 3.5                           | 0.75-1.5                       | 275                                 | X  | 0.3 x 2.8                  |                      |                              | U   | S  | 5.5  | 88.00         | 37.50     |                                    |
|   | V15 Series II-EE   | 10-20           | MM   | No  | 25                             |                                     |                                     | 3.5                           | 0.75-1.5                       | 275                                 | E  | 0.3 x 0.7                  |                      |                              | U   | S  | 5.5  | 55.00         | 21.50     |                                    |
|   | V-15 Series II-E   | 10-18           | MM   | No  | 22                             |                                     |                                     | 3.5                           | 1-2                            | 275                                 | E  | 0.3 x 0.7                  |                      |                              | U   | S  | 5.5  | 50.00         | 16.50     |                                    |
| PIONEER   | PC-295T  |                 |  |   |                                |                                     |                                     |                               |                                |                                     |  |                            |                      |                              |   |  |  | 80.00         | 35.00     |                                    |
|   | PC-290T  |                 |  |   |                                |                                     |                                     |                               |                                |                                     |  |                            |                      |                              |   |  |  | 70.00         | 30.00     |                                    |
|   | PC-250T  |                 |  |   |                                |                                     |                                     |                               |                                |                                     |  |                            |                      |                              |   |  |  | 50.00         | 20.00     |                                    |
|   | PC-5MC   |                 |  |   |                                |                                     |                                     |                               |                                |                                     |  |                            |                      |                              |   |  |  | 54.00         | 32.00     |                                    |
|   |  |                 |  |   |                                |                                     |                                     |                               |                                |                                     |  |                            |                      |                              |   |  |  |               |           |                                    |
| RATA  | RP20   | 20-20 $\pm$ 3   | MM   | No  | 25                             |                                     |                                     | 4.5                           | 1.5-1.75                       | 150                                 | E  |                            |                      | 16/16                        | U   | S  | 7.1  | 60.00         | 50.00     |                                    |
|   | RP40   | 20-20 $\pm$ 3   | MM   | No  | 26                             |                                     |                                     | 4.5                           | 1.5-1.75                       | 150                                 | E  |                            |                      | 16/16                        | U   | S  | 7.1  | 125.00        | 100.00    |                                    |
|   | RP70 VdH   | 20-20 $\pm$ 3   | MM   | No  | 28                             |                                     |                                     | 4.5                           | 1.5-1.75                       | 150                                 | V  |                            |                      | 16/16                        | U   | S  | 7.1  | 350.00        | 275.00    |                                    |
|   | RP500  | 20-22 $\pm$ 3   | MC   | No  | 25                             |                                     |                                     | 0.25                          | 1.5-1.75                       | 100                                 | V  |                            |                      | 16/16                        | F   | S  | 9  | 700.00        | 350.00    |                                    |
|   | RP501  | 20-22 $\pm$ 3   | MC   | No  | 25                             |                                     |                                     | 2.5                           | 1.5-1.75                       | 100                                 | V  |                            |                      | 16/16                        | F   | S  | 9  | 700.00        | 350.00    |                                    |
| REGA RESEARCH   | Bias Elys  |                 | MM   | No  | 30                             |                                     |                                     | 6.5                           | 1.75                           |                                     | E  |                            |                      |                              | F   | S  | 4  | 99.00         | 60.00     |                                    |
|   |  |                 | MM   | No  | 30                             |                                     |                                     | 6.5                           | 1.75                           |                                     | E  |                            |                      |                              | F   | S  | 4.5  | 199.00        | 120.00    |                                    |
| ROKSAN  | Shiraz   | 20-30 $\pm$ 0.5 | MC   | Yes   |                                |                                     |                                     | 0.21                          | 2-2.2                          |                                     | V  |                            |                      |                              | F   | S  |  | 1450.00       |           |                                    |
| JEFF ROWLAND<br>DESIGN GROUP  | Complement   | 10-45 $\pm$ 1.5 | MC   | No  | 27                             |                                     |                                     | 0.2                           | 2.3-2.7                        |                                     | X  |                            |                      | 6/6                          |   | S  | 15.7   | 2500.00       |           |                                    |
|   | LH Complement  | 10-45 $\pm$ 1.5 | MC   | No  | 27                             |                                     |                                     | 0.2                           | 2.1-2.5                        |                                     | X  |                            |                      | 6/6                          |   | S  | 14.7   | 1200.00       |           |                                    |
| SHINON  | Black Magnet   | 10-35           | MM   | No  | 30                             |                                     |                                     | 2.8                           | 1.2-1.5                        |                                     | E  |                            |                      | 19/19                        | F   |  | 6.8  | 199.00        | 99.50     |                                    |
|   | Black Magnet Super   | 10-35           | MM   | No  | 30                             |                                     |                                     | 2.8                           | 1.2-1.5                        |                                     | M  |                            |                      | 19/19                        | F   |  | 6.8  | 319.00        | 159.50    |                                    |
|   | Titan  | 10-40           | MC   | No  |                                |                                     |                                     | 0.4                           | 1.2-1.5                        |                                     | E  |                            |                      |                              | F   |  |  | 239.00        | 119.50    |                                    |
|   | MV2.5 Improved   | 10-45           | MC   | No  |                                |                                     |                                     | 2.5                           | 1.75-2.25                      |                                     | X  |                            |                      |                              | F   |  |  | 419.00        | 209.50    |                                    |
|   | Saphic Improved  | 10-45           | MC   | No  |                                |                                     |                                     | 0.3                           | 1.75-2.25                      |                                     | X  |                            |                      |                              | F   |  |  | 499.00        | 249.50    |                                    |
|   | Red Boron Improved   | 10-45           | MC   | No  |                                |                                     |                                     | 1.0                           | 1.75-2.25                      |                                     | M  |                            |                      |                              | F   |  |  | 899.00        | 449.50    |                                    |

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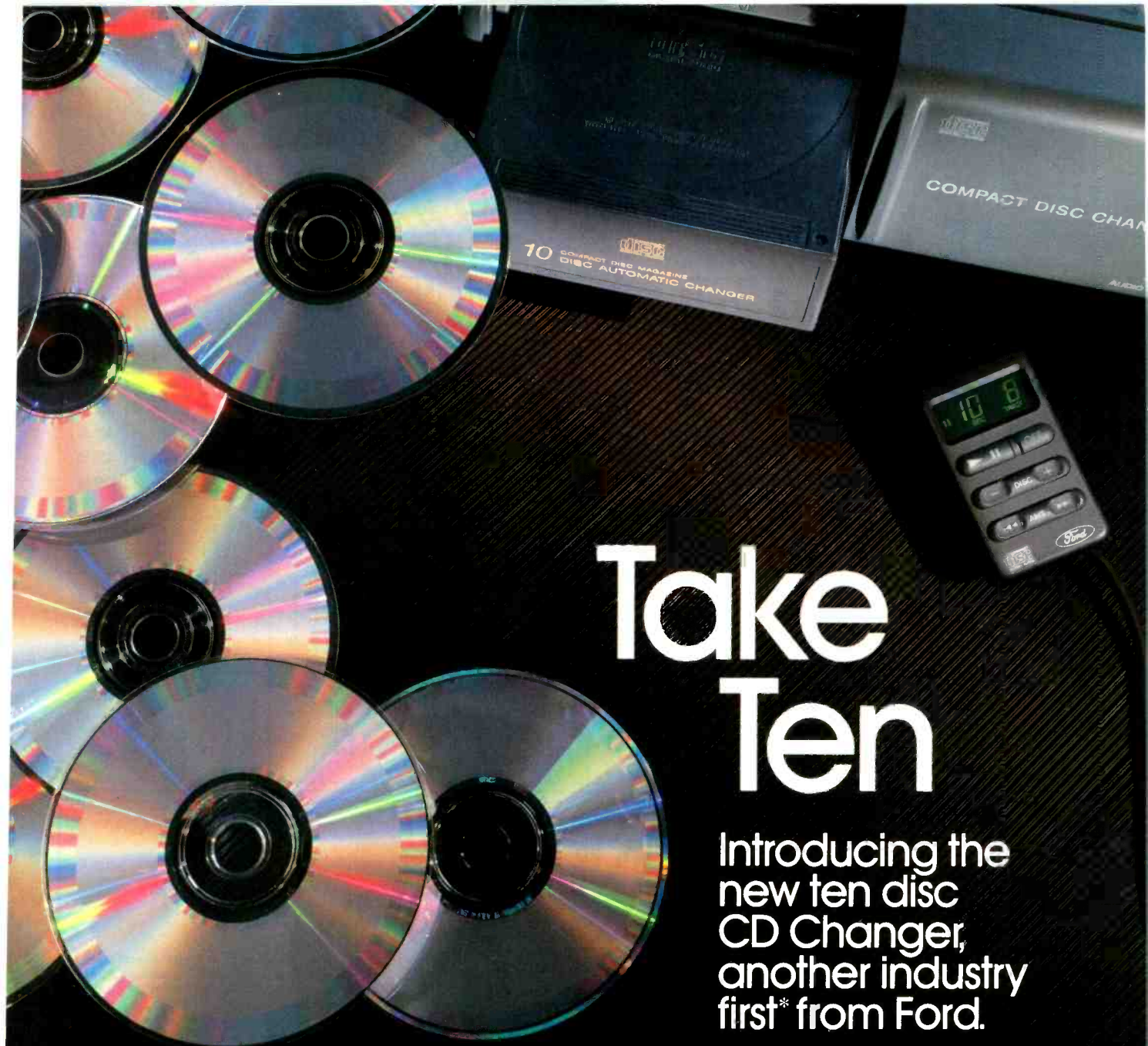


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# PHONO CARTRIDGES

| STYLUS TYPE<br>C—Conical<br>S—Spherical<br>E—Elliptical<br>M—MicroLine,<br>MicroRidge, or similar<br>V—Van den Hul<br>X—Hyper-Elliptical,<br>Stereohedron, Fine Line,<br>Line Contact, Long Line,<br>Line Trace, or similar | MANUFACTURER      | Model                                 | Frequency Response,<br>Hz to kHz, ± dB | Principle: Moving Iron—MI<br>Induced Magnet—IM<br>Moving Magnet—MM | Individual Response Curve Supplier? | Channel Separation: 1 kHz, dB | Channel Separation: 10 kHz, dB | Output, mV, 1 kHz,<br>5 cm/sec. rms Lateral Velocity | Recommended Tracking Force<br>Range, Grams | Recommended Load Capacitance, pF | Stylus Type—See Code | Stylus Radius (Radius), Milis | Dynamic Compliance, l./mm.MN.<br>Vertical/Lateral | Stylus Replacement:<br>User = U, Factory = F | Mounting: Integral Shell = I,<br>P-Mount = P, Standard = S | Weight, Grams | Price, \$         | Replacement<br>Stylus Price, \$ |
|---|-------------------|---------------------------------------|--|--|-------------------------------------|-------------------------------|--------------------------------|--|--|----------------------------------|----------------------|-------------------------------|---|--|--|---------------|-------------------|---------------------------------|
|   | SHURE             | Ultra 500                             | 10-35 ± 0.5                            | MM   | No                                  | 27                            | 20                             | 3.2  | 1.2  | 250                              | M                    | 0.15 x 3.0                    |   | U  | S  | 9.3           | 400.00            | 145.00                          |
|   |                   | VST V                                 | 10-35                                  | MM   | No                                  | 25                            | 15                             | 3.2  | 1.0-1.5                                    | 250                              | M                    | 0.15 x 3.0                    |   | U  | S  | 6.4           | 170.00            | 100.00                          |
|   |                   | VST III                               | 20-20                                  | MM   | No                                  | 25                            | 13                             | 3.0  | 1.0-1.5                                    | 250                              | X                    | 0.2 x 1.5                     |   | U  | S  | 6.6           | 100.00            | 50.00                           |
|   |                   | VST III-P                             | 20-20                                  | MM   | No                                  | 25                            | 13                             | 3.0  | 1.25                                       | 250                              | X                    | 0.2 x 1.5                     |   | U  | S  | 5.9           | 90.00             | 45.00                           |
|   |                   | V15 Type V-MR                         | 20-28 ± 0.75                           | MM   | Yes                                 | 25                            | 18                             | 3.2  | 1.0-1.25                                   | 250                              | M                    | 0.15 x 3.0                    |   | U  | S  | 6.6           | 297.00            | 136.00                          |
|   |                   | V15 Type V-B                          | 20-28 ± 0.75                           | MM   | Yes                                 | 25                            | 18                             | 3.2  | 1.0-1.25                                   | 250                              | X                    | 0.2 x 1.5                     |   | U  | S  | 6.6           | 237.50            | 120.00                          |
|   |                   | V15 Type V-P                          | 20-28 ± 0.75                           | MM   | Yes                                 | 25                            | 18                             | 3.2  | 1.25                                       | 250                              | X                    | 0.2 x 1.5                     |   | U  | S  | 6.8           | 221.50            | 109.00                          |
|   |                   | M111HE                                | 20-20                                  | MM   | No                                  | 25                            | 4.0                            | 1.25   | 1.25                                       | 250                              | X                    | 0.2 x 1.5                     |   | U  | P/S  | 5.9           | 145.95            | 63.95                           |
|   |                   | M110HE                                | 20-20                                  | MM   | No                                  | 25                            | 4.0                            | 1.25   | 1.25                                       | 250                              | X                    | 0.2 x 1.5                     |   | U  | P/S  | 5.9           | 118.95            | 53.95                           |
|   |                   | M105E                                 | 20-20                                  | MM   | No                                  | 25                            | 4.7                            | 1.25   | 1.25                                       | 250                              | X                    | 0.2 x 0.7                     |   | U  | P/S  | 6.4           | 107.95            | 44.95                           |
|   |                   | M104E                                 | 20-20                                  | MM   | No                                  | 20                            | 5.0                            | 1.25   | 1.25                                       | 250                              | E                    | 0.2 x 0.7                     |   | U  | P/S  | 5.9           | 75.95             | 34.95                           |
|   |                   | M99E                                  | 20-20                                  | MM   | No                                  | 20                            | 5.0                            | 1.25   | 1.25                                       | 250                              | E                    | 0.2 x 0.7                     |   | U  | P/S  | 5.9           | 53.95             | 24.95                           |
|   |                   | M92E                                  | 20-18                                  | MM   | No                                  | 20                            | 5.0                            | 1.25   | 1.25                                       | 250                              | E                    | 0.4 x 0.7                     |   | U  | P/S  | 5.9           | 32.95             | 19.95                           |
|   |                   | M55E                                  | 20-20                                  | MM   | No                                  | 20                            | 6.2                            | 0.75-2   | 0.75-2                                     | 450                              | E                    | 0.2 x 0.7                     |   | U  | S  | 6.7           | 70.95             | 29.95                           |
|   |                   | M44E                                  | 20-20                                  | MM   | No                                  | 20                            | 9.5                            | 1.75-4.0   | 1.75-4.0                                   | 450                              | S                    | 0.7                           |   | U  | S  | 6.7           | 61.95             | 27.95                           |
|   |                   | M44C                                  | 20-20                                  | MM   | No                                  | 20                            | 9.5                            | 3.0-5.0  | 3.0-5.0                                    | 450                              | S                    | 0.7                           |   | U  | S  | 6.7           | 54.95             | 24.95                           |
|   |                   | M44G                                  | 20-20                                  | MM   | No                                  | 20                            | 6.2                            | 0.75-1.5   | 0.75-1.5                                   | 450                              | S                    | 0.6                           |   | U  | S  | 6.7           | 56.95             | 25.95                           |
|   |                   | M44-7                                 | 20-20                                  | MM   | No                                  | 20                            | 9.5                            | 1.5-3  | 1.5-3                                      | 450                              | S                    | 0.7                           |   | U  | S  | 6.7           | 54.95             | 24.95                           |
|   |                   | ME97HE                                | 20-20                                  | MM   | No                                  | 25                            | 4.0                            | 0.75-1.5   | 0.75-1.5                                   | 250                              | X                    | 0.2 x 1.5                     |   | U  | S  | 6.6           | 99.95             | 39.95                           |
|   |                   | ME95ED                                | 20-20                                  | MM   | No                                  | 25                            | 4.7                            | 0.75-1.5   | 0.75-1.5                                   | 250                              | E                    | 0.2 x 0.7                     |   | U  | S  | 5.8           | 69.95             | 28.95                           |
|   |                   | ME75ED                                | 20-20                                  | MM   | No                                  | 25                            | 6.0                            | 0.75-1.5   | 0.75-1.5                                   | 250                              | E                    | 0.2 x 0.7                     |   | U  | S  | 6.1           | 59.95             | 34.95                           |
|   |                   | ME75EJ                                | 20-20                                  | MM   | No                                  | 20                            | 6.0                            | 1.5-3.0  | 1.5-3.0                                    | 250                              | E                    | 0.4 x 0.7                     |   | U  | S  | 6.1           | 49.95             | 31.95                           |
|   |                   | ME70B                                 | 20-20                                  | MM   | No                                  | 20                            | 6.0                            | 1.5-3.0  | 1.5-3.0                                    | 250                              | S                    | 0.6                           |   | U  | S  | 6.5           | 29.95             | 16.95                           |
|   |                   | ME96P                                 | 20-20                                  | MM   | No                                  | 20                            | 5.0                            | 1.25   | 1.25                                       | 250                              | E                    | 0.2 x 0.7                     |   | U  | P  | 5.9           | 59.95             | 34.95                           |
|   |                   | ME94P                                 | 20-20                                  | MM   | No                                  | 20                            | 5.0                            | 1.25   | 1.25                                       | 250                              | E                    | 0.2 x 0.7                     |   | U  | P  | 5.9           | 44.95             | 24.95                           |
|   |                   | ME75P                                 | 20-20                                  | MM   | No                                  | 20                            | 5.0                            | 1.25   | 1.25                                       | 250                              | E                    | 0.4 x 0.7                     |   | U  | P  | 5.9           | 29.95             | 19.95                           |
|   |                   | SC35C                                 | 20-20                                  | MM   | No                                  | 20                            | 5.0                            | 4-5  | 4-5  | 450                              | S                    | 0.6                           |   | U  | S  | 6.2           | 48.50             | 18.50                           |
|   |                   | SC39B                                 | 20-20                                  | MM   | No                                  | 20                            | 4.0                            | 1.5-3.0  | 1.5-3.0                                    | 250                              | S                    | 0.7                           |   | U  | S  | 6.3           | 68.00             | 27.80                           |
|   |                   | SC39EJ                                | 20-20                                  | MM   | No                                  | 20                            | 4.0                            | 1.5-3  | 1.5-3                                      | 250                              | E                    | 0.4 x 0.7                     |   | U  | S  | 6.3           | 76.00             | 34.90                           |
|   | SIGNET            | OC9                                   | 15-50                                  | MC   | Yes                                 | 29                            | 20                             | 0.4  | 1.25-1.75                                  |                                  | E                    | 0.2 x 0.7                     |   | F  | S  | 7.8           | 395.00            |                                 |
|   |                   | MK120E                                | 15-30                                  | MC   | No                                  | 28                            | 18                             | 0.5  | 1.2-1.8                                    | 100                              | E                    | 0.2 x 0.7                     |   | U  | S  | 5             | 200.00            |                                 |
|   |                   | MK55E                                 | 20-28                                  | MC   | No                                  | 28                            | 18                             | 0.5  | 1.2-1.8                                    |                                  | E                    | 0.3 x 0.7                     |   | U  | S  | 4.2           | 150.00            |                                 |
|   |                   | AM50                                  | 5-37                                   | MM   | Yes                                 | 33                            | 23                             | 5  | 0.8-1.8                                    |                                  | M                    |                               |   | U  | S  | 6             | 350.00            |                                 |
|   |                   | AM40                                  | 5-35                                   | MM   | Yes                                 | 33                            | 23                             | 5  | 0.8-1.6                                    |                                  | X                    |                               |   | U  | S  | 6             | 275.00            |                                 |
|   |                   | AM30                                  | 5-30                                   | MM   | Yes                                 | 30                            | 20                             | 5  | 0.8-1.6                                    |                                  | E                    | 0.3 x 0.7                     |   | U  | S  | 6             | 225.00            |                                 |
|   |                   | AM20                                  | 10-30                                  | MM   | No                                  | 29                            | 19                             | 5  | 0.9-1.9                                    |                                  | E                    | 0.3 x 0.7                     |   | U  | P/S  | 6             | 195.00            |                                 |
|   |                   | AM10                                  | 15-25                                  | MM   | No                                  | 27                            | 17                             | 5  | 1.3-2.3                                    |                                  | E                    | 0.3 x 0.7                     |   | U  | P/S  | 6             | 125.00            |                                 |
|   |                   | 107                                   | 10-30                                  | MM   | No                                  | 31                            | 21                             | 3  | 1.6  |                                  | X                    |                               |   | U  | P/S  |               | 150.00            |                                 |
|   |                   | 105                                   | 15-27                                  | MM   | No                                  | 29                            | 18                             | 5  | 1.6  |                                  | E                    | 0.3 x 0.7                     |   | U  | P/S  |               | 110.00            |                                 |
|   |                   | 103                                   | 15-25                                  | MM   | No                                  | 25                            | 17                             | 5  | 1.6  |                                  | E                    | 0.4 x 0.7                     |   | U  | P/S  |               | 90.00             |                                 |
|   |                   | 101                                   | 20-20                                  | MM   | No                                  | 24                            | 15                             | 5  | 1.6  |                                  | C                    | 0.6                           |   | U  | P/S  |               | 60.00             |                                 |
|   |                   | 100                                   | 20-22                                  | MM   | No                                  | 22                            | 15                             | 4.2  | 1.5-2.5                                    |                                  | E                    | 0.4 x 0.7                     |   | U  | S  |               | 60.00             |                                 |
|   | SONUS             | CG-12                                 | 10-30                                  | MI   | No                                  | 30                            | 25                             | 4  | 1-1.5                                      | 340                              | X                    |                               |   | U  | S  | 5.5           | 165.00            | 87.00                           |
|   |                   | CS-22                                 | 10-38                                  | MI   | No                                  | 30                            | 25                             | 5  | 1-1.5                                      | 340                              | X                    |                               |   | U  | S  | 5.5           | 100.00            | 50.00                           |
|   |                   | CS-23                                 | 20-22                                  | MI   | No                                  | 30                            | 25                             | 5  | 1-1.5                                      | 340                              | E                    |                               |   | U  | S  | 5.5           | 95.00             | 45.00                           |
|   |                   | CB-23                                 | 20-22                                  | MI   | No                                  | 30                            | 25                             | 5  | 1.5-2.0                                    | 340                              | E                    |                               |   | U  | S  | 5.5           | 80.00             | 40.00                           |
|   |                   | SR-202                                | 10-20                                  | MI   | No                                  | 30                            | 25                             | 5  | 1.5-2.5                                    | 340                              | E                    |                               |   | U  | S  | 5.5           | 60.00             | 25.00                           |
|   |                   | SPM-4                                 | 20-20                                  | MI   | No                                  | 30                            | 25                             | 4  | 1.25                                       | 340                              | E                    |                               |   | U  | P  | 5.5           | 135.00            | 30.00                           |
|   |                   | SPM-3                                 | 20-20                                  | MI   | No                                  | 30                            | 25                             | 4  | 1.25                                       | 340                              | E                    |                               |   | U  | P  | 5.5           | 125.00            | 25.00                           |
|   |                   | SPM-2                                 | 20-20                                  | MI   | No                                  | 30                            | 25                             | 4  | 1.25                                       | 340                              | E                    |                               |   | U  | P  | 5.5           | 95.00             | 20.00                           |
|   |                   | SPM-1                                 | 20-20                                  | MI   | No                                  | 30                            | 25                             | 4  | 1.25                                       | 340                              | E                    |                               |   | U  | P  | 5.5           | 75.00             | 17.50                           |
|   | SPECTRAL<br>AUDIO | MCR-1<br>Signature<br>MCR-1<br>Select | 10-20 ± 0.5<br>10-20 ± 0.5             | MC<br>MC   |                                     | 40<br>40                      | 35<br>35                       | 0.2<br>0.2   | 1.8<br>1.8                                 |                                  | X<br>X               |                               |   | F<br>F                                       | S<br>S   | 8.9<br>9.5    | 1190.00<br>990.00 |                                 |
|   | STANTON           | 981LZ MKIIS                           | 10-50                                  | MM   | Yes                                 | 35                            | 25                             | 0.3  | 0.75-1.5                                   |                                  | X                    | 0.3 x 2.8                     | 30/   | U  | S  | 5.5           | 250.00            | 90.00                           |
|   |                   | 981HZ MKIIS                           | 10-50                                  | MM   | Yes                                 | 35                            | 25                             | 0.3  | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                     | 30/   | U  | S  | 5.5           | 250.00            | 90.00                           |
|   |                   | 881 MKIIS                             | 10-25                                  | MM   | Yes                                 | 35                            | 35                             | 0.3  | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                     | 30/   | U  | S  | 5.5           | 180.00            | 75.00                           |
|   |                   | 681EEE MKIIS                          | 10-22                                  | IM   | Yes                                 | 35                            | 35                             | 0.3  | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                     | 25/   | U  | S  | 6.3           | 120.00            | 45.00                           |
|   |                   | L847S                                 | 10-36                                  | MM   | No                                  | 35                            | 35                             | 0.3  | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                     |   | U  | P/S  | 5.9           | 198.00            | 60.00                           |
|   |                   | L747S                                 | 10-30                                  | MM   | No                                  | 35                            | 35                             | 0.3  | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                     |   | U  | P/S  | 5.9           | 155.00            | 55.00                           |
|   |                   | L737S                                 | 10-25                                  | MM   | No                                  | 35                            | 35                             | 0.3  | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                     |   | U  | P/S  | 5.7           | 138.00            | 40.00                           |
|   |                   | L737E                                 | 10-22                                  | MM   | No                                  | 35                            | 35                             | 0.3  | 0.75-1.5                                   | 275                              | E                    | 0.3 x 0.7                     |   | U  | P/S  | 5.7           | 110.00            | 36.00                           |
|   |                   | L727E                                 | 10-20                                  | MM   | No                                  | 32                            | 4.4                            | 0.3  | 0.75-1.5                                   | 275                              | E                    | 0.3 x 0.7                     |   | U  | P/S  | 5.7           | 83.00             | 24.50                           |
|   |                   | L725E                                 | 10-22                                  | MM   | No                                  | 28                            | 3.0                            | 0.3  | 0.75-1.5                                   | 275                              | E                    | 0.4 x 0.7                     |   | U  | P/S  | 5.7           | 60.00             | 22.00                           |
|   |                   | L720EE                                | 10-20                                  | MM   | No                                  | 28                            | 3.2                            | 0.3  | 0.75-1.5                                   | 275                              | E                    | 0.4 x 0.7                     |   | U  | P/S  | 5.7           | 55.00             | 20.00                           |
|   |                   | L680EL                                | 20-18                                  | IM   | No                                  | 28                            | 4.5                            | 4-5  | 4-5  | 275                              | E                    | 0.4 x 0.7                     | 13.5/   | U  | P/S  | 8.4           | 106.00            | 30.00                           |
|   |                   | 680EL                                 | 20-18                                  | IM   | No                                  | 30                            | 4.5                            | 2-5  | 2-5  | 275                              | E                    | 0.4 x 0.7                     | 13.5/   | U  | S  | 5.5           | 106.00            | 30.00                           |
|   |                   | 681SE                                 | 10-10                                  | IM   | Yes                                 | 35                            | 4.5                            | 2-4  | 2-4  | 275                              | E                    | 0.4 x 0.7                     | 12.5  | U  | S  | 5.5           | 110.00            | 39.00                           |
|   |                   | 680AL                                 | 20-18                                  | IM   | No                                  | 30                            | 4.5                            | 2-5  | 2-5  | 275                              | S                    | 0.7                           | 13/13   | U  | S  | 5.5           | 90.00             | 25.00                           |
|   |                   | 500AL                                 | 20-17                                  | MM   | No                                  | 28                            | 4.0                            | 2-5  | 2-5  | 275                              | S                    | 0.7                           | 10/   | U  | S  | 5             | 58.00             | 12.00                           |
|   |                   | 500AL-MP                              | 20-17                                  | MM   | No                                  | 28                            | 4.0                            | 2-5  | 2-5  | 275                              | S                    | 0.7                           | 10/   | U  | S  | 5             | 122.00            | 22.00                           |
|   |                   | L500AL                                | 20-17                                  | MM   | No                                  | 28                            | 4.0                            | 3.5-4  | 3.5-4                                      | 275                              | S                    | 0.7                           |   | U  | P/S  | 8.4           | 53.00             | 16.00                           |
|   |                   | 500AL-DP<br>(w/2 Stylus)              | 20-17                                  | MM   | No                                  | 28                            | 4.0                            | 3.5-4  | 3.5-4                                      | 275                              | S                    | 0.7                           |   | U  | S  | 6.3           | 30.00             | 43.75                           |
|   |                   | 680EE(S)                              | 20-20                                  | MM   | No                                  | 35                            | 3.5                            | 1-2  | 1-2  | 275                              | X                    | 0.3 x 0.7                     | 18/18   | U  | S  | 6.3           | 72.50             | 27.50                           |
|   |                   | 680EE                                 | 20-20                                  | IM   | No                                  | 35                            | 3.5                            | 0.75-1.5   | 0.75-1.5                                   | 275                              | E                    | 0.3 x 0.7                     | 18/18   | U  | S  | 6.3           | 80.00             | 31.25                           |
|   |                   | 680EL-MP                              | 20-18                                  | IM   | No                                  | 30                            | 4.5                            | 2-5  | 2-5  | 275                              | E                    | 0.4 x 0.7                     | 13.5/   | U  | S  | 5.5           | 149.00            | 55.00                           |
|   |                   | 500EE MKII                            | 10-22                                  | MM   | No                                  | 35                            | 4.5                            | 0.75-1.5   | 0.75-1.5                                   | 275                              | E                    | 0.3 x 0.7                     | 16/   | U  | S  | 5.5           | 60.00             | 20.00                           |
|   |                   | 500E MKII                             | 10-22                                  | MM   | No                                  | 35                            | 0.8                            | 0.75-1.5   | 0.75-1.5                                   | 275                              | E                    | 0.4 x 0.7                     | 14/   | U  | S  | 5.5           | 55.00             | 15.00                           |
|   |                   | STC-740                               | 10-20                                  | MM   | No                                  | 32                            | 4.4                            | 0.75-1.5   | 0.75-1.5                                   | 275                              | E                    | 0.4 x 0.7                     |   | U  | S  | 5.9           | 44.00             | 24.00                           |
|   |                   | STC-730                               | 10-22                                  | MM   | No                                  | 28                            | 3.0                            | 0.75-1.5   | 0.75-1.5                                   | 275                              | E                    | 0.4 x 0.7                     |   | U  | P/S  | 5.9           | 33.00             | 22.00                           |
|   |                   | STC-710                               | 10-20                                  | MM   | No                                  | 28                            | 3.0                            | 0.75-1.5   | 0.75-1.5                                   | 275                              | E                    | 0.4 x 0.7                     |   | U  | P/S  | 5.9           | 22.00             | 15.00                           |
|   |                   | 890AL                                 | 20-20                                  | MM   | No                                  | 30                            | 3.0                            | 2-7  | 2-7  | 275                              | S                    | 0.7                           |   | U  | S  | 5.5           | 125.00            | 36.75                           |
|   |                   | 680AL                                 | 20-18                                  | MI   | No                                  | 28                            | 1.1                            | 2-5  | 2-5  | 275                              | S                    | 0.7                           | 10/   | U  | S  | 5.5           | 90.00             | 25.00                           |
|   |                   | Collector's<br>Series 100             | 20-20 ± 1                              | MM   | No                                  | 35                            | 3.2                            | 0.75-1.5   | 0.75-1.5                                   | 275                              | X                    | 0.3 x 2.8                     | 30/   | U  |  |               |                   |                                 |



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# PHONO CARTRIDGES

| STYLUS TYPE<br>C—Conical<br>S—Spherical<br>E—Elliptical<br>M—MicroLine,<br>MicroRidge, or similar<br>V—Van den Hul<br>X—Hyper-Elliptical,<br>Stereohedron, Fine Line,<br>Line Contact, Long Line,<br>Line Trace, or similar | Model                  | Frequency Response,<br>Hz to kHz, $\pm$ dB | Principle: Moving Iron = MI,<br>Induced Magnet = IM,<br>Moving Magnet = MM | Individual Response Curve Supplied? | Channel Separation, 1 kHz, dB | Output, mV, 1 kHz,<br>5 cm/sec. rms Lateral Velocity | Recommended Tracking Force<br>Range, Grams | Recommended Load Capacitance, pF | Stylus Type—See Code | Stylus Radius (Radius), Milis | Dynamic Compliance,<br>Vertical/Lateral | Stylus Replacement<br>User = U, Factory = F | Mounting: Integral Shell = I,<br>P-Mount = P, Standard = S | Weight, Grams | Price, \$ | Replacement<br>Stylus Price, \$ |
|---|------------------------|--|--|-------------------------------------|-------------------------------|--|--|----------------------------------|----------------------|-------------------------------|---|---|--|---------------|-----------|---------------------------------|
| SUMIKO  | Blue Point             | 15-35                                      | MC   | No                                  | 32                            | 32   | 3.0  | 1.25-1.7                         | E                    | 0.3 x 0.7                     | 15/15                                   | F   | P/S  | 5.9           | 125.00    |                                 |
|   | Oyster                 | 30-20                                      | MM   | No                                  | 25                            | 25   | 4.0  | 1.5-2.5                          | S                    | 0.6                           | 12/12                                   | U   | S  | 5.3           | 30.00     |                                 |
|   | Black Pearl            | 18-27                                      | MM   | No                                  | 28                            | 28   | 5.0  | 1.5-2.0                          | S                    | 0.5                           | 15/15                                   | U   | S  | 6.0           | 50.00     |                                 |
|   | Pearl                  | 12-30                                      | MM   | No                                  | 30                            | 30   | 5.0  | 1.5-2.0                          | E                    | 0.2 x 0.8                     | 15/15                                   | U   | S  | 6.0           | 75.00     |                                 |
| TALISMAN  | AT                     | 20-40                                      | MC   | Yes                                 | 25                            | 22   | 0.20                                       | 1.5-2.1                          | V                    | 0.3 x 0.7                     | 15/15                                   | F   | S  | 6.3           | 225.00    | 135.00                          |
|   | BvdH                   | 10-50                                      | MC   | Yes                                 | 30                            | 30   | 0.26                                       | 1.5-2.1                          | V                    | 0.1 x 3.0                     | 15/15                                   | F   | S  | 6.3           | 325.00    | 195.00                          |
|   | SvdH                   | 10-60                                      | MC   | Yes                                 | 30                            | 30   | 0.26                                       | 1.8-2.2                          | V                    | 0.1 x 3.0                     | 18/18                                   | F   | S  | 6.3           | 395.00    | 235.00                          |
|   | Alchemist IAT          | 20-40                                      | MC   | Yes                                 | 25                            | 22   | 1.8  | 1.5-2.1                          | E                    | 0.3 x 0.7                     | 15/15                                   | F   | S  | 6.7           | 300.00    | 180.00                          |
|   | Alchemist IHS          | 10-60                                      | MC   | Yes                                 | 30                            | 30   | 1.8  | 1.8-2.2                          | V                    | 0.1 x 3.0                     | 18/18                                   | F   | S  | 6.7           | 495.00    | 300.00                          |
|   | vdH                    |  |  |                                     |                               |  |  |                                  |                      |                               |   |   |  |               |           |                                 |
|   | Alchemist IIB          | 15-32                                      | MC   | Yes                                 | 35                            | 30   | 1.8  | 1.8-2.2                          | V                    | 0.1 x 3.0                     | 15/15                                   | F   | S  | 6.7           | 475.00    | 285.00                          |
|   | vdH                    | +2, -0.5                                   |  |                                     |                               |  |  |                                  |                      |                               |   |   |  |               |           |                                 |
|   | Virtuoso Boron         | 15-32                                      | MC   | Yes                                 | 35                            | 30   | 1.8  | 1.8-2.2                          | V                    | 0.1 x 3.0                     | 15/15                                   | F   | S  | 7.5           | 850.00    | 510.00                          |
|   | Virtuoso DTI           | +2, -0.5                                   |  |                                     |                               |  |  |                                  |                      |                               |   |   |  |               |           |                                 |
| TECHNICS  | EPC-P550               | 20-35 $\pm$ 3                              | MM   | No                                  | 25                            |  | 2.5  | 1.25                             | E                    | 0.3 x 0.7                     |   | U   | P  | 6             | 139.00    |                                 |
|   | EPC-P540               | 20-35 $\pm$ 3                              | MM   | No                                  | 25                            |  | 2.5  | 1.25                             | E                    | 0.3 x 0.7                     |   | U   | P  | 6             | 109.00    |                                 |
|   | EPC-P530               | 20-35 $\pm$ 3                              | MM   | No                                  | 25                            |  | 2.5  | 1.25                             | E                    | 0.3 x 0.7                     |   | U   | P  | 6             | 79.00     |                                 |
| VAN DEN HUL   | MC-10                  | 20-20 $\pm$ 0.75                           | MC   | Yes                                 | 40                            | 30   | 0.5  | 1.3-1.5                          | V                    |                               |   | F   | S  | 7.3           | 775.00    | 388.00                          |
|   | MC-One                 | 20-20 $\pm$ 0.75                           | MC   | Yes                                 | 40                            | 30   | 0.7  | 1.3-1.5                          | V                    |                               |   | F   | S  | 7.3           | 1075.00   | 538.00                          |
|   | MC-Two                 | 20-20 $\pm$ 0.75                           | MC   | Yes                                 | 40                            | 30   | 2  | 1.1-1.4                          | V                    |                               |   | F   | S  | 7.3           | 1475.00   | 738.00                          |
|   | Grasshopper            |  | MC   | Yes                                 | 50                            | 40   | 0.5  | 1.3-1.5                          | V                    |                               |   | F   | S  |               | 2700.00   | 538.00                          |
|   | MM-1                   |  | MM   | No                                  | 26                            | 20   | 5  | 1.0-1.25                         | V                    |                               |   | U   | S  |               | 350.00    | 175.00                          |
| WIN RESEARCH  | FET-10 & Source Module | 0-50 $\pm$ 1                               | FET  | Yes                                 | 35                            | 28   | 1V   | 1.25                             | X                    |                               | 20/20                                   | F   | S  | 6             | 2250.00   | 350.00                          |
| YAMAHA  | MC-100                 | 20-20                                      | MC   | No                                  | 28                            |  | 0.2  | 1.2-1.6                          | E                    | 0.3 x 1.6                     | 12/14                                   | F   | S  | 9.5           | 300.00    |                                 |
|   | MC-501                 | 20-20                                      | MC   | No                                  | 28                            |  | 0.35                                       | 1.2-1.8                          | E                    | 0.3 x 1.6                     | 11/13                                   | F   | S  | 3.4           | 150.00    |                                 |
|   | MC-10                  | 20-20                                      | MC   | No                                  | 27                            |  | 0.3  | 1.4-2.0                          | E                    | 0.3 x 0.8                     | 8/10                                    | F   | S  | 5.4           | 120.00    |                                 |
|   | MC-21                  | 20-20                                      | MC   | No                                  | 28                            |  | 2.0  | 1.4-2.0                          | E                    | 0.3 x 0.8                     | 8/10                                    | F   | S  | 2.8           | 70.00     |                                 |



## Authorized Canton Dealers

**AZ Phoenix:** Audio Video Specialists, Bruce Wardin & Associates • **Tempe:** Precision Audio Specialists  
**CA Corona del Mar:** Pacific Coast Audio Video • Glendale: Crystal Sonics, Marconi Radio • **La Crescenta:** Chatham-Becker Corp. • **Long Beach:** Audio Concepts • **Los Angeles:** Henry Radio, Paris Audio, Audio Command Systems, Supervision, Robert's Home Audio & Video, Western & Olympic A/V Center • **Mission Viejo:** Video Laser • **Newhall:** Chatham-Becker Corp. • **Oakland:** Pro Audio Electronics • **Palm Desert:** Desert Stereo • **San Francisco:** Custom Car Alarms, Harmony A/V of Fillmore, House of Music, Peter's Auto Radio • **San Gabriel:** Audio Concepts • **San Jose:** Paradise Sound • **San Leandro:** Mad Audio Systems • **San Mateo:** Mateo High Fidelity • **Santa Ana:** Solid State TV-Audio • **Santa Monica:** R Squared Installers • **South Lake Tahoe:** Accurate TV • **Torrance:** Dimensions in Stereo • **Woodland Hills:** Paris Audio  
**CO Aspen:** Aspen Audio • **Boulder:** Listen Up • **Colorado Springs:** Listen Up • **Denver:** Listen Up  
**CT Greenwich:** F. Steyer Design • **Hartford:** The Stereo Shop • **Old Greenwich:** C.A.R.S.  
**DC Washington:** Myer-Emco, Provideo, Inc.  
**DE Dover:** Sound Studio • **Newark:** Sound Studio • **Wilmington:** Sound Studio  
**FL Boca Raton:** Sound Plus Wood • **Brandon:** The Car Stereo Shoppe • **Coral Gables:** Sound Performance • **Daytona Beach:** Audio Video Analyst • **Dunedin:** All States Radio • **Hollywood:** Audio 2000 • **Ft. Lauderdale:** Sound Design & Engineering • **Ft. Myers:** Car Tunes • **Jacksonville:** Behrens Audio Lab, Cruising Tunes • **Miami:** Las Fabricas • **Naples:** Stereo Garage • **New Port Richey:** Stereo Specialties • **Palm Harbor:** Auto Audio • **Tampa:** Monte's Rolling Sound • **Tequesta:** TV/Audio Ctr • **Winter Haven:** Audio Equalizers  
**HI Honolulu:** Custom Car Stereo, Hakko Camera & Electronics  
**IA: Cedar Rapids:** H-S Industries

**IL Aurora:** United Audio Centers • **Chicago:** United Audio Centers, Hi Fi Hutch • **Northbrook:** United Audio Centers • **Naperville:** Hi Fi Hutch • **Niles:** United Audio Centers • **Northlake:** Guy's Auto Sound • **Schaumburg:** Hi Fi Hutch, United Audio Centers • **Vernon Hills:** United Audio Centers • **Villa Park:** Hi Fi Hutch • **Downer Grove:** Safear Autosound Engineering • **Wilmette:** Village TV A/V  
**IN Carmel:** Tom Doherty's Custom Audio • **Ft. Wayne:** Classic Stereo • **Michigan City:** Audio Connection  
**KS Overland Park:** Brands Mart • **Wichita:** Custom Sound  
**MA Cambridge:** Audio Video Environments, New England Audio/Media Systems • **Medford:** Boston Media Design  
**MI Mount Pleasant:** Dr. Goodears Audio Palor  
**MD Gaithersburg:** Myer-Emco, East Coast Auto Sound-Owings Mills: Lighting Experience • **Rockville:** Myer-Emco Provideo-Salisbury: Sound Studio  
**MN Brooklyn Center:** Audio King • **Burnsville:** Audio King • **Edina:** Audio King • **Mankato:** Audio King • **Minneapolis:** Audio King, Audio Systems & Design, Audio Video Environments, Blumberg Communications, • **Minnetonka:** Audio King • **Rochester:** Audio King • **St. Cloud:** Audio King • **St. Paul:** Audio King • **St. Louis Park:** Audio by Design  
**MO Kansas City:** Brands Mart Midwest • **St. Louis:** T. Melodious  
**NC Charlotte:** Stereo Showcase • **Winston-Salem:** Audio Video Concepts/Ed Kelly's, Inc.  
**NE Lincoln:** Sound Environment • **Omaha:** Sound Environment  
**NJ Cliffside Park:** Entertainment Environments • **Deptford:** Hi-Fi Connection • **Livingston:** Electromedia Design, Inc. • **Marlton:** Hi-Fi Connection • **Millburn:** Professional Audio Consultants • **Northfield:** Sound, Inc. • **Oceanside:** Ocean Cellular • **Paramus:** Stereo Video Warehouse • **Springfield:** Kartunes Mobile Electronics •

**Wayside:** Studio Standards Inc. • **West Caldwell:** Comtel, Samm Sound • **West Long Branch:** Woodbridge Stereo Center • **Woodbridge:** Woodbridge Stereo Center  
**NV Las Vegas:** Elite Systems  
**NY Brooklyn:** Rabson's Stereo Warehouse • **Coram:** Sound Images • **Garden City:** Rabson's • **Hauppauge:** Audio Interiors • **Huntington:** AB Car Stereo, Total Media Systems • **Manhasset:** Autospec • **New York:** Cosmophonics Sound, Harmony House, Mobile Audio Specialists, Rabson's • **Oceanside:** Absolute Auto Sound, Sound Insights • **Port Jefferson Stn:** Designatron • **Rego Park:** Continental Sound • **Rockville Centre:** Audio Command Systems • **Syosset:** American Soundcraft • **Southampton:** Charos Custom Sound • **Staten Island:** Clone Audio • **Valley Stream:** Stereo Video Warehouse • **West Nyack:** Audio Video Systems, Inc. • **White Plains:** Audio Design Associates, Stereo Video Warehouse  
**OK Tulsa:** Imperial Sound  
**OR Eugene:** Bradford's High Fidelity  
**PA Ardmore:** All That Jazz • **Bethlehem:** Canlen Audio • **Ephrata:** Stereo Barn • **Lancaster:** Stereo Barn • **Philadelphia:** David-Mann Ltd., Teppers Autosound  
**RI Middletown:** Soundings  
**SD Sioux Falls:** Audio King  
**TX Austin:** Audio Dimensions • **Houston:** Groove Audio Video • **Laredo:** Jett Sales • **San Antonio:** Bjorn's Stereo Designs  
**VA Charlottesville:** Preferred Sound • **Falls Church:** Myer-Emco • **Fredericksburg:** Contemporary Sounds • **Roanoke:** Custom Auto Sound • **Virginia Beach:** Videorama  
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# OPEN-REEL TAPE DECKS

| SPEED CODE<br>A—7½, 3¾<br>B—7½, 3¾, 1⅞<br>C—7½, 3¾<br>1⅞, 15/16<br>D—15, 7½<br>E—15, 7½, 3¾ |             |              |   |                        |                           |                 |                  |                                 |                  |   |                             |                    |                          |              |  |   |                     |                    |              |   |       |  |  |  |  |  |  |  |  |
|---|-------------|--------------|---|------------------------|---------------------------|-----------------|------------------|---------------------------------|------------------|---|-----------------------------|--------------------|--------------------------|--------------|--|---|---------------------|--------------------|--------------|---|-------|--|--|--|--|--|--|--|--|
|   |             | MANUFACTURER | Model<br>(R) = Remote Included.<br>(RD) = Remote Optional | Speeds—See Letter Code | Maximum Reel Size, Inches | Number of Heads | Number of Tracks | Number of Channels, Record/Play | Drive to Capstan | Frequency Response Hz to kHz, ±dB,<br>with Best Tape at Highest Machine Speed | Wow & Flutter, Wtd. Peak, % | S/N, "A" Wtd., —dB | Output Level at 0 VU, mV | Mike Mixing? | Mike Input Impedance, Ohms, Balanced = B | Record Level Indicator(s),<br>Number and Type | EE Tape Capable?    | Dimensions, Inches | Weight, Lbs. | Price, \$   | Notes |  |  |  |  |  |  |  |  |
| FOSTEX  | R8          | †            | 7   | 2                      | 8                         | 8               | 4                |                                 | 40-18            | 0.06  | 74                          |                    | No                       |              | ††                                       |   | 12½ x 13½ x 6⅞      | 28                 | 2800.00      | †15 ips. ††Eight-segment bar graph. Dolby C NR.   |       |  |  |  |  |  |  |  |  |
|   | E-2         | D            | 10½   | 3                      | 2                         | 2               | 3                |                                 | 30-20            | 0.05  | 80                          |                    | No                       |              | 2 VU Mtrs. & 2 Peak LEDs                 |   | 17 x 17½ x 9¼       | 73                 | 3795.00      |   |       |  |  |  |  |  |  |  |  |
|   | E-22        | †            | 10½   | 3                      | 2                         | 2               | 3                |                                 | 40-18            | 0.05  | 80                          |                    | No                       |              | 2 VU Mtrs. & 2 Peak LEDs                 |   | 17 x 17½ x 9¼       | 73                 | 3995.00      | †15 and 30 ips.   |       |  |  |  |  |  |  |  |  |
| NAGRA   | 4.2         | E            | 10½   | 4                      | 1                         | 1               | 1                | Belt                            | 30-20 ±5         | 0.05  | †                           | 560                | Yes                      | 200          | 1 VU Mtr.                                | Yes   | 13½ x 9½ x 4½       | 15                 | 7970.00      | †NAB, 70 dB; CC1R, 68 dB. Sync capability. Sync capability.                                   |       |  |  |  |  |  |  |  |  |
|   | IV-S        | E            | 10½   | 4                      | 2                         | 2               | 1                | Belt                            | 0-4 +0, -3       | 0.05  | 74                          | 560                | Yes                      | 200          | 1 VU Mtr.                                | Yes   | 13½ x 9½ x 4½       | 15½                | 9775.00      |   |       |  |  |  |  |  |  |  |  |
|   | IV-STC      | E            | 10½   | 4                      | 2                         | 1               | 1                | Belt                            | 30-20 ±1         | 0.05  | 72                          | 560                | Yes                      | 100k         | 1 VU Mtr.                                | Yes   | 13¼ x 9½ x 4½       | 15½                | 10,895.      | Center-track time code.   |       |  |  |  |  |  |  |  |  |
|   | E           | †            | 10½   | 3                      | 1                         | 1               | 1                | Belt                            | 70-4.5 ±3        | 0.05  | 50                          | 560                | No                       | 330          | 1 VU Mtr.                                | Yes   | 12¾ x 8½ x 4        | 12½                | 5995.00      | †15/16 ips. Sync and non-sync. †"E" speeds plus 30 ips. Center-track and internal time codes. |       |  |  |  |  |  |  |  |  |
|   | T-Audio     | †            | 10½   | 4                      | 3                         | 3               | 2                | Belt                            | 50-60 ±1         | 0.05  | 77                          | 775                | No                       | 10k          | LED                                      | Yes   | 15¾ x 13¼ x 9¾      | 70                 | 22,450.      |   |       |  |  |  |  |  |  |  |  |
| OTARI   | MK-III-8    | D            | 10½   | 3                      | 8                         | 8               | 3                |                                 | 30-18 ±2         | 0.04  | 68                          | 330                | No                       |              | 8 VU Mtrs.                               |   | 17.3 x 21.3 x 26.6  | 110                | 5495.00      |   |       |  |  |  |  |  |  |  |  |
|   | MK-III-4    | D            | 10½   | 3                      | 4                         | 4               | 3                |                                 | 30-20 ±2         | 0.04  | 69                          | 330                | No                       |              | 4 VU Mtrs.                               |   | 19.2 x 21.3 x 27.5  | 77                 | 5935.00      |   |       |  |  |  |  |  |  |  |  |
|   | MK-III-2    | E            | 10½   | 4                      | 2                         | 2               | 3                |                                 | 30-20 ±2         | 0.04  | 68                          | 330                | Yes                      |              | 2 VU Mtrs.                               |   | 18.75 x 21.3 x 28.3 | 105                | 3925.00      |   |       |  |  |  |  |  |  |  |  |
|   | B-II        | E            | 10½   | 4                      | 2                         | 2               | 3                |                                 | 25-22 ±2         | 0.04  | 68                          | 330                | Yes                      |              | 2 VU Mtrs.                               |   | 22.1 x 21.3 x 10.9  | 60                 | 2995.00      |   |       |  |  |  |  |  |  |  |  |
|   | BQ-II       | D            | 10½   | 4                      | 4                         | 4               | 3                |                                 | 30-20 ±2         | 0.06  | 66                          | 330                | Yes                      |              | 4 VU Mtrs.                               |   | 22.1 x 21.3 x 10.2  | 66                 | 4345.00      |   |       |  |  |  |  |  |  |  |  |
|   | MX-50       | †            | 10½   | 3                      | 2                         | 2               | 3                |                                 | 30-20 ±2         | 0.06  | 69                          | 330                | No                       |              | 2 VU Mtrs.                               |   | 18 x 17.2 x 7.4     | 52                 | 2495.00      | †"A" or "D" speeds.   |       |  |  |  |  |  |  |  |  |
|   | MX-55N      | †            | 10½   | 4                      | 2                         | 2               | 3                |                                 | 30-20 ±2         | 0.06  | 69                          | 330                | Yes                      |              | 2 VU Mtrs.                               |   | 19.5 x 17.6 x 8.9   | 67                 | 3895.00      |   |       |  |  |  |  |  |  |  |  |
|   | MX-55NM     | †            | 10½   | 4                      | 2                         | 2               | 3                |                                 | 30-20 ±2         | 0.06  | 69                          | 330                | No                       |              | 2 VU Mtrs.                               |   | 20 x 17.6 x 29.6    | 67                 | 4995.00      |   |       |  |  |  |  |  |  |  |  |
|   | MX-55TM     | †            | 10½   | 4                      | 2                         | 2               | 3                |                                 | 30-20 ±2         | 0.06  | 69                          | 330                | No                       |              | 2 VU Mtrs.                               |   | 20 x 17.6 x 29.6    | 67                 | 5995.00      |   |       |  |  |  |  |  |  |  |  |
| REVOX   | B77 MKII    | †            | 10½   | 3                      | 2¼                        | 2               | 3                | Direct                          | 30-22 ±2, -3     | 0.06  | 67                          | 775                | Yes                      | 22k, 110k    | 2 Mtrs. & 2 Peak LEDs                    | No  | 16½ x 17¾ x 8¼      | 37½                | 2450.00      | †Any two adjacent speeds from 15/16 to 15 ips.  |       |  |  |  |  |  |  |  |  |
| TASCAM  | 22-2        | D            | 7   | 3                      | 2                         | 2               | 3                |                                 | 40-22 ±3         | 0.04  | 68                          |                    |                          | 200          | VU Mtr. & Peak LEDs                      |   | 16½ x 16½ x 9½      | 30½                | 1099.00      |   |       |  |  |  |  |  |  |  |  |
|   | 32          | D            | 10½   | 3                      | 2                         | 2               | 3                |                                 | 40-20 ±3         | 0.05  | 68                          |                    |                          | 200          | VU Mtr. & Peak LEDs                      |   | 16¾ x 18¾ x 10½     | 44                 | 1749.00      |   |       |  |  |  |  |  |  |  |  |
|   | 428         | D            | 10½   | 3                      | 2                         | 2               | 3                |                                 | 30-20 ±2         | 0.05  | 70                          |                    |                          | 150B         | VU Mtr. & Peak LEDs                      |   | 17 x 19½ x 10¾      | 70½                | 2999.00      |   |       |  |  |  |  |  |  |  |  |
| TEAC  | X-300       | A            | 7   | 3                      | 2¼                        | 2¼              | 3                | Belt                            | 40-30 ±3         | 0.04  | 65                          |                    | Yes                      |              | 2 VU Mtrs.                               | Yes   | 16½ x 12½ x 9½      | 30.9               | 1145.00      |   |       |  |  |  |  |  |  |  |  |
|   | X-300R      | A            | 7   | 3                      | 2¼                        | 2¼              | 3                | Belt                            | 40-30 ±3         | 0.04  | 65                          |                    | Yes                      |              | 2 VU Mtrs.                               | Yes   | 16½ x 12½ x 9½      | 33                 | 1280.00      | Auto reverse.   |       |  |  |  |  |  |  |  |  |
|   | X-2000(RO)  | A            | 10½   | 3                      | 2¼                        | 2¼              | 3                | Belt                            | 40-33 ±3         | 0.03  | 100                         |                    | Yes                      |              | 2 VU Mtrs.                               | Yes   | 17 x 17½ x 10½      | 46.3               | 1950.00      | Spooling mode; dbx Type I NR.   |       |  |  |  |  |  |  |  |  |
|   | X-2000M(RO) | D            | 10½   | 3                      | †                         | †               | 3                | Belt                            | 40-40 ±3         | 0.02  | 100                         |                    | Yes                      |              | 2 VU Mtrs.                               | Yes   | 17 x 17½ x 10½      | 46.2               | 2235.00      | †½ track record/play. As above.   |       |  |  |  |  |  |  |  |  |
|   | X-2000R(RO) | A            | 10½   | 3                      | 2¼                        | 2¼              | 3                | Belt                            | 40-33 ±3         | 0.03  | 100                         |                    | Yes                      |              | 2 VU Mtrs.                               | Yes   | 17 x 17½ x 10½      | 46.3               | 2055.00      | Auto reverse.   |       |  |  |  |  |  |  |  |  |
| UHER  | 4000        | C            | 5   | 3                      | 2                         | 1               | 1                | Belt                            | 20-25 ±2         | 0.2   | 64                          | 775                | Yes                      | 200          | 1 VU Mtr.                                | Yes   | 11 x 3½ x 9         | 8                  | 1699.00      |   |       |  |  |  |  |  |  |  |  |
|   | 4200        | C            | 5   | 3                      | 2                         | 2               | 1                | Belt                            | 20-25 ±2         | 0.2   | 64                          | 775                | Yes                      | 200B         | 2 VU Mtrs.                               | Yes   | 11 x 3½ x 9         | 8                  | 1799.00      |   |       |  |  |  |  |  |  |  |  |
|   | 4400        | C            | 5   | 3                      | 4                         | 2               | 1                | Belt                            | 20-25 ±2         | 0.2   | 62                          | 775                | Yes                      | 200B         | 2 VU Mtrs.                               | Yes   | 11 x 3½ x 9         | 8                  | 1799.00      | 24 hours record time.   |       |  |  |  |  |  |  |  |  |
|   | 6000        | †            | 5   | 3                      | 2                         | 1               | 4                | Belt                            | 20-22 ±3         | 0.2   | 62                          | 775                | Yes                      | 220          | 1 VU Mtr.                                | Yes   | 11 x 3½ x 9         | 8                  | 2150.00      | †"C" speeds plus 15/32 ips.   |       |  |  |  |  |  |  |  |  |
|   | SG 631      | B            | 10½   | 4                      | 4                         | 2               | 4                |                                 | 20-22 ±3         | 0.1   | 67                          |                    | Yes                      | 200          | 2 VU Mtrs.                               | Yes   | 20 x 4½ x 16        | 29                 | 2295.00      |   |       |  |  |  |  |  |  |  |  |
|   | 1200        | A            | 5   | 3                      | 1                         | 1               | 1                | Belt                            | 40-16            | 0.15  | 62                          | 600                | Yes                      | 200          | 1 VU Mtr.                                | Yes   | 11 x 3½ x 9         | 8                  | 5049.00      |   |       |  |  |  |  |  |  |  |  |
|   |             |              |   |                        |                           |                 |                  |                                 |                  |   |                             |                    |                          |              |  |   |                     |                    |              |   |       |  |  |  |  |  |  |  |  |





# CASSETTE DECKS

| MANUFACTURER   | Model (R) - Remote Included, (RD) - Remote Optional   | Frequency Response with Best Tape, Hz to kHz, $\pm$ dB   | Monitoring During Recording?   | Wow & Flutter, Wtd. Peak, %   | S/N without Noise Reduction, "A" Wtd., -dB                           | S/N with Noise Reduction, "A" Wtd., -dB                              | Noise Reduction Circuit, Dolby B, C, D, X, Pro-H, Other = O                                 | Bias Adjustment, Auto = A, Manual = M     | Number of Preset Bias/EQ Positions                       | Program Search?   | Program Scan?  | Level Indicators, Meter = A, Peak = P, Peak-Hold = PH | Counter Indications, Number of Tapes = T, Closed Time = E, Remaining Time = R | Auto Reverse?  | Number of Mike Inputs                                    | Dual Wells?  | Weight, Lbs.   | Price, \$  | Notes  |
|----------------|---|--|--|---|--|--|---|---|--|---|--|---|---|--|--|--|--|--|--|
| A/D/S/         | C4(RD)<br>C2/3(RD)  | 20-20 $\pm$ 2<br>20-18 $\pm$ 2   | Yes<br>No  | 0.035<br>0.035  | 60<br>58   | 76<br>72   | B/C/H<br>B/C/H  | A   | 3  | Yes<br>Yes  | Yes<br>Yes   | P<br>P  | E/R<br>E/R  | No<br>No   | 2<br>0   | No<br>No   | 23<br>23   | 1250.00<br>700.00  |  |
| AIWA           | AD-F1000<br>AD-F780<br>AD-R40<br>AD-S37<br>AD-S27<br>AD-F800<br>AD-WX909<br>AD-WX999 (RI)<br>AD-WX888<br>AD-WX777<br>AD-WX505<br>AD-WX333 | 20-20 $\pm$ 3<br>20-19 $\pm$ 3<br>20-18<br>+3, -10<br>20-18<br>+3, -10<br>20-17<br>+3, -10<br>20-19 $\pm$ 3<br>20-18 $\pm$ 3<br>20-16 $\pm$ 3<br>20-16 $\pm$ 3<br>20-16<br>20-14 $\pm$ 3 | Yes<br>Yes<br>No<br>No<br>No<br>Yes<br>Yes<br>No<br>No<br>No<br>No<br>No | 0.025<br>0.035<br>0.065<br>0.065<br>0.09<br>0.035<br>0.055<br>0.055<br>0.065<br>0.065<br>0.09<br>0.09 | 63<br>59<br>58<br>58<br>58<br>59<br>61<br>59<br>58<br>58<br>58<br>65 | 95<br>78<br>78<br>78<br>78<br>78<br>80<br>78<br>78<br>78<br>78<br>78 | B/C/<br>D/H<br>B/C/H<br>B/C/H<br>B/C<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C<br>B/C<br>B |   | 3<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3 | No<br>No<br>No<br>No<br>No<br>No<br>Yes<br>No<br>No<br>No<br>No | No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No | P<br>P<br>P<br>P<br>P<br>P<br>PH<br>PH<br>P<br>P<br>P | T/E<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T                    | No<br>No<br>No<br>No<br>No<br>No<br>Yes<br>Yes<br>Yes<br>Yes<br>No | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0 | No<br>No<br>No<br>No<br>No<br>No<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes  | 17.9<br>11.4<br>7.3<br>7<br>6.4<br>11.2<br>13.7<br>11.9<br>11.5<br>7<br>7.3  | 800.00<br>450.00<br>200.00<br>180.00<br>120.00<br>400.00<br>800.00<br>550.00<br>430.00<br>330.00<br>180.00<br>150.00 | Auto tape/source monitor selector.<br>Double-quick auto reverse.<br>As above.<br>As above.                   |
| AR             | RD-06   | 30-16  | Yes  | 0.06  | 55   | 64   | B/C/H   | M   | 3  | No  | Yes  | P   | T   | No   | 0  | No   | 11 1/2   | 500.00   |  |
| BANG & OLUFSEN | Beocord 5500<br>Beocord 4500<br>Beocord 3300  | 30-18 $\pm$ 3<br>30-18 $\pm$ 3<br>30-18 $\pm$ 3  | No<br>No<br>No   | 0.09<br>0.09<br>0.09  | 55<br>55<br>56   | 74<br>66<br>65   | B/C/H<br>B/H<br>B/H   | A<br>A<br>A                               | 3<br>3<br>3  | Yes<br>Yes<br>Yes   | No<br>No<br>No   | P/PH<br>P<br>P  | T<br>T<br>T   | Yes<br>Yes<br>No   | 1<br>0<br>1  | No<br>No<br>No   | 18.4<br>9.9<br>8.3   | 1100.00<br>800.00<br>550.00  |  |
| CARRERA        | CX-3250<br>CD-7500(RI)  | 40-14 $\pm$ 3<br>40-16 $\pm$ 3   | No<br>No   | 0.08<br>0.06  | 52<br>55   | 63<br>73   | B<br>B/C  |   | 3<br>3   | No<br>Yes   | No<br>No   | P<br>P  | T<br>T  | No<br>Yes  | 2<br>0   | Yes<br>No  | 10<br>13   | 149.95<br>449.95   | Combination CD changer/cassette deck; see also "CD Players."   |
| DENON          | DR-M34HR (RI)<br>DRM-800<br>DRM-700<br>DRW-750<br>DRR-680<br>DRM-600<br>DRM-500<br>DRM-400  | 25-20 $\pm$ 3<br>20-20 $\pm$ 3<br>25-20 $\pm$ 3<br>20-18 $\pm$ 3<br>20-19 $\pm$ 3<br>20-20 $\pm$ 3<br>25-18 $\pm$ 3<br>25-18 $\pm$ 3   | Yes<br>Yes<br>Yes<br>No<br>No<br>No<br>No<br>No                          | 0.045<br>0.038<br>0.045<br>0.06<br>0.06<br>0.055<br>0.055<br>0.057                                    | 75<br>75<br>73<br>74<br>74<br>74<br>74<br>73                         | B/C/H<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C   | M<br>M<br>M<br>M<br>M<br>M<br>M<br>M  | 3<br>3<br>3<br>3<br>3<br>3<br>3<br>3      | No<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes      | No<br>No<br>No<br>No<br>No<br>No<br>No<br>No                    | No<br>PH<br>PH<br>P<br>P<br>P<br>P<br>P                        | T<br>E<br>E<br>T<br>T<br>T<br>T<br>T                  | No<br>No<br>No<br>Yes<br>No<br>No<br>No<br>No                                 | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                               | No<br>No<br>No<br>Yes<br>No<br>No<br>No<br>No            | 12 1/4<br>10 1/2<br>10 1/2<br>10 1/2<br>9 1/4<br>9<br>8 1/2<br>8 1/2 | 500.00<br>500.00<br>400.00<br>400.00<br>400.00<br>350.00<br>275.00<br>240.00 |  |  |
| DUAL           | CC5850<br>CC8025  | 25-19 $\pm$ 3<br>25-16 $\pm$ 2   | Yes<br>Yes   | 0.05<br>0.08  | 60<br>60   | 76<br>72   | B/C/H<br>B/C  | M   | 3  | Yes<br>Yes  | Yes<br>No  | A/PH<br>P   | T<br>T  | No<br>No   | 0<br>1   | No<br>Yes  | 12 1/2<br>10   | 450.00<br>400.00   |  |
| FISHER         | CR-Z1(RI)<br>CR-905(RI)<br>CR-W780<br>CR-680  | 30-19 $\pm$ 3<br>40-17 $\pm$ 3<br>40-15 $\pm$ 3<br>50-15 $\pm$ 3   | Yes<br>Yes<br>Yes<br>Yes   | 0.045<br>0.06<br>0.15<br>0.15   | 52<br>52<br>51<br>51   | 92<br>72<br>61<br>61   | B/C<br>D/H<br>B/C<br>B  |   | 3<br>3<br>3<br>3   | Yes<br>Yes<br>No<br>No  | Yes<br>Yes<br>No<br>No   | P<br>P<br>P<br>P                                      | T<br>T<br>T<br>T  | Yes<br>Yes<br>Yes<br>No  | 0<br>0<br>0<br>0   | Yes<br>Yes<br>Yes<br>Yes   | 18.7<br>11.5<br>9.3<br>8.5   | 599.95<br>249.95<br>159.95<br>119.95   |  |
| FOSTEX         | X-26<br>160<br>260  | 40-12.5<br>40-14<br>40-14  | Yes<br>Yes<br>Yes  | 0.15<br>0.1<br>0.1  | 58<br>70<br>70   | B/C<br>C<br>C  |   |   | 0<br>0<br>0  | No<br>No<br>No  | No<br>No<br>No   | P<br>P<br>P   | T<br>T<br>E   | No<br>No<br>Yes  | 2<br>4<br>4  | No<br>No<br>No   | 4<br>7<br>13   | 449.00<br>840.00<br>1195.00  |  |
| GRUNDIG        | CCT-903   | 30-18 $\pm$ 3  | No   | 0.09  | 58   | 73   | B/C   |   | 0  | No  | No   | A/PH  |   | Yes  | 0  | Yes  | 15   | 899.00   | Quick reverse.   |
| HARMAN KARDON  | TD212<br>TD262<br>TD302<br>TD392<br>CD491   | 20-20 $\pm$ 3<br>20-20 $\pm$ 3<br>20-20 $\pm$ 3<br>20-22 $\pm$ 3<br>20-24 $\pm$ 3  | No<br>No<br>No<br>Yes<br>Yes   | 0.05<br>0.05<br>0.05<br>0.05<br>0.025   | 57<br>57<br>57<br>57<br>58   | 73<br>73<br>73<br>73<br>75   | B/C<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C/H   |   | 3<br>3<br>3<br>3<br>3                                    | No<br>No<br>No<br>No<br>Yes                                     | No<br>No<br>No<br>No<br>Yes                                    | P<br>P<br>P<br>P<br>P/PH                              | T<br>T<br>T<br>T<br>T/E   | No<br>No<br>No<br>No<br>No   | 0<br>0<br>0<br>0<br>2                                    | No<br>No<br>No<br>No<br>No   | 8.5<br>10<br>12.8<br>12.8<br>14.3  | 299.00<br>399.00<br>499.00<br>799.00<br>1099.00  | Auto repeat.<br>As above.<br>Closed-loop dual capstan;<br>built-in test-tone oscillators.                    |
| JVC            | TDX321BK<br>TDR421BK<br>TDV621BK<br>TDV1010TN<br>TDW201BK<br>TDW301BK<br>TDW501BK<br>TDW801BK<br>TDW901BK                                 | 13-16 $\pm$ 3<br>13-16 $\pm$ 3<br>15-20 $\pm$ 3<br>15-20 $\pm$ 3<br>40-15 $\pm$ 3<br>40-15 $\pm$ 3<br>30-16 $\pm$ 3<br>30-16 $\pm$ 3<br>30-17 $\pm$ 3                                    | No<br>No<br>Yes<br>Yes<br>No<br>No<br>No<br>No<br>No                     | 0.08<br>0.08<br>0.035<br>0.022<br>0.08<br>0.08<br>0.08<br>0.08<br>0.08                                | 58<br>58<br>59<br>61<br>58<br>58<br>58<br>58<br>58                   | 73<br>73<br>74<br>76<br>73<br>73<br>73<br>73<br>73                   | B/C/H<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C<br>B/C<br>B/C<br>B/C<br>B/C/H                       | M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M | 3<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3                | No<br>No<br>Yes<br>Yes<br>No<br>No<br>Yes<br>Yes<br>Yes         | No<br>No<br>No<br>No<br>No<br>No<br>No<br>No<br>No             | P<br>P<br>P/PH<br>P/PH<br>P<br>P<br>P<br>P<br>P       | T<br>T<br>T/E/R<br>T/E/R<br>T<br>T<br>T<br>T<br>T                             | No<br>Yes<br>No<br>No<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes           | 0<br>0<br>0<br>0<br>0<br>0<br>2<br>2<br>0                | No<br>No<br>No<br>No<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes              | 8.2<br>8.4<br>16.8<br>No<br>8.6<br>8.4<br>10<br>No<br>No                     | 240.00<br>290.00<br>510.00<br>700.00<br>200.00<br>260.00<br>310.00<br>360.00<br>480.00                               |  |
| KENWOOD        | KX-8010(RD)<br>KX-6010(RD)<br>KX-3510(RD)<br>KX-68W(RD)<br>KX-58W(RD)<br>KX-48C(RD)   | 30-15 $\pm$ 3<br>30-16 $\pm$ 3<br>30-17 $\pm$ 3<br>30-15 $\pm$ 3<br>30-15 $\pm$ 3<br>30-15 $\pm$ 3   | No<br>No<br>No<br>No<br>No<br>No   | 0.08<br>0.08<br>0.08<br>0.08<br>0.08<br>0.08  | 57<br>57<br>59<br>57<br>57<br>56                                     | 65<br>65<br>68<br>65<br>65<br>64                                     | B/C/H<br>B/C/H<br>B/C/H<br>B<br>B<br>B/C  | A<br>A<br>A<br>A<br>A<br>A                | 3<br>3<br>3<br>3<br>3<br>3                               | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes                          | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes                         | P<br>P<br>P<br>P<br>P<br>P                            | T<br>T<br>T<br>T<br>T<br>T  | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes                             | 0<br>0<br>1<br>0<br>0<br>2                               | Yes<br>Yes<br>No<br>Yes<br>Yes<br>No                                 | 12<br>11<br>10 3/4<br>10 3/4<br>8 3/4<br>7                                   | 429.00<br>329.00<br>299.00<br>279.00<br>229.00<br>179.00   |  |
| LUXMAN         | K-111<br>K-112<br>K-110<br>K-110W<br>K-105  | 30-18<br>20-21<br>30-17<br>30-17<br>20-18  | No<br>Yes<br>No<br>No<br>No  | 0.06<br>0.05<br>0.07<br>0.07<br>0.05  | 55<br>56<br>56<br>56<br>60   | 70<br>73<br>74<br>74<br>71   | B/C/H<br>B/C/H<br>B/C/H<br>B/C/H<br>B/C/D   | M   | 3  | No<br>No<br>No<br>No<br>Yes                                     | No<br>No<br>No<br>No<br>No                                     | P<br>P<br>P<br>P<br>P                                 | T<br>T<br>T<br>T<br>T   | No<br>No<br>Yes<br>Yes<br>Yes                                      | 2<br>0<br>2<br>0<br>0                                    | No<br>No<br>Yes<br>Yes<br>No   | 7.7<br>9.5<br>5.4<br>6.3<br>9.9  | 380.00<br>600.00<br>480.00<br>580.00<br>600.00   |  |
| MARANTZ        | DA 2452CB<br>SD 285<br>SD 385<br>SD 565<br>DL 3507  | 40-16<br><br><br><br>20-20   | No<br>No<br>No<br>No<br>No   | 0.12<br><br><br><br>0.06  | 55<br><br><br><br>74   | 64<br><br><br><br>74   | B<br>B/C<br>B/C<br>B/C<br>B/C/H   | No<br><br><br><br>A                       | 3<br><br><br><br>Yes                                     | No<br><br><br><br>Yes   | No<br><br><br><br>Yes  | P<br>P<br>P<br>P<br>P                                 | T<br>T<br>T<br>T<br>T   | Yes<br>No<br>Yes<br>Yes<br>Yes                                     | 0<br>0<br>0<br>0<br>0                                    | Yes<br>Yes<br>Yes<br>Yes<br>No                                       |  | 169.95<br>249.00<br>299.00<br>429.00<br>380.00   | High-speed dubbing.<br>As above.<br>As above.<br>As above.<br>Synchro record with Marantz CD-3577 CD player. |

POWERFUL

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# A STEEL FIST IN A VELVET GLOVE.



100 watts/channel into 8 ohms, 20-20kHz with no more than 0.5% THD. A power spec like this immediately suggests the new HR-752 is no ordinary remote control receiver. Underneath its mild-mannered exterior lurks the power needed to effortlessly deliver the full impact of digital music sources. Simultaneous high current and high voltage output that unflinchingly handles speaker impedance variations. With the right set of speakers, you may be able to rearrange your furniture by remote control.

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## CARVER

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## CASSETTE DECKS

| MANUFACTURER  | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional | Frequency Response<br>Hz to kHz, ±dB | Monitoring Response with Best Tape,<br>±dB | Wow & Flutter, Wtd. Peak, % | S/N without Noise Reduction,<br>dB | S/N with Noise Reduction,<br>dB | Noise-Reduction Circuit: Only B = B,<br>Dolby C = C, D = D, HF Pro = H, Other = O | Bias Adjustment: "A" = Wtd., -dB<br>"B" = Wtd., -dB | Number of Preset Bias/EQ Positions | Program Search? | Level Indicators: Average = A,<br>Peak = P, Peak-Hold = PH | Counter Indications: Number of Turns = T,<br>Elapsed Time = E, Remaining Time = R | Auto Reverse? | Number of Mike Inputs | Dual Weells? | Weight, Lbs. | Price, \$ | Notes   |   |  |
|---------------|--|--------------------------------------|--|-----------------------------|------------------------------------|---------------------------------|---|---|------------------------------------|-----------------|--|---|---------------|-----------------------|--------------|--------------|-----------|---------|---|--|
|               |  |                                      |  |                             |                                    |                                 |   |   |                                    |                 |  |   |               |                       |              |              |           |         |   |  |
| MITSUBISHI    | M-T5100(RI)  | 30-16                                | No   | 0.08                        | 57                                 | 77                              | B/C   |   | 3                                  | Yes             | Yes  | P   | T             | Yes                   | 0            | Yes          | 13.4      | 350.00  |   |  |
| NAD           | 6100(RI)   | 30-19 ±3                             | No   | 0.06                        | 57                                 | 77                              | B/C/H   | M   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 10 3/8    | 499.00  |   |  |
|               | 6300(RI)   | 30-19 ±3                             | Yes  | 0.03                        | 59                                 | 78                              | B/C/H   | M   | 3                                  | No              | No   | P   | T/E           | No                    | 0            | No           | 13        | 899.00  |   |  |
|               | 6325   | 35-16 ±3                             | No   | 0.06                        | 56                                 | 76                              | B/C   |   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 9 3/4     | 229.00  |   |  |
|               | 6340   | 30-19 ±3                             | No   | 0.06                        | 57                                 | 77                              | B/C/H   | M   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 9 3/4     | 399.00  |   |  |
| NAKAMICHI     | Dragon(RO)   | 20-22 ±3                             | Yes  | 0.04                        |                                    | 72                              | B/C   | M   | 3                                  | No              | No   | P   | T             | Yes                   | 0            | No           | 21        | 2195.00 | Auto azimuth correction.                          |  |
|               | RX-505(RO)   | 20-20 ±3                             | Yes  | 0.08                        |                                    | 70                              | B/C   | M   | 3                                  | Yes             | No   | P   | T             | Yes                   | 0            | No           | 22        | 1395.00 | Flips cassette for tape reverse.                  |  |
|               | RX-202   | 20-20                                | No   | 0.11                        |                                    | 68                              | B/C   | No  | 3                                  | No              | No   | P   | T             | Yes                   | 0            | No           | 19 3/4    | 795.00  | As above.   |  |
|               | CR-7A(RI)  | 18-21 ±3                             | Yes  | 0.048                       |                                    | 72                              | B/C   | A   | 3                                  | No              | No   | P/PH  | T/E/R         | No                    | 0            | No           | 19 3/4    | 1695.00 | Manual playback azimuth adjustment.               |  |
|               | CR-5A(RO)  | 20-20 ±3                             | Yes  | 0.048                       |                                    | 72                              | B/C   | M   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 18 3/4    | 1095.00 |   |  |
|               | CR-4A(RO)  | 20-21 ±3                             | Yes  | 0.048                       |                                    | 72                              | B/C   | M   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 13        | 995.00  | Dolby level adjustment with test tone.            |  |
| NAKAMICHI     | CR-3A(RO)  | 20-20 ±3                             | Yes  | 0.06                        |                                    | 72                              | B/C   | M   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 12 3/4    | 795.00  |   |  |
|               | CR-2A(RO)  | 20-20                                | No   | 0.11                        |                                    | 70                              | B/C   | M   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 11 7/8    | 495.00  |   |  |
|               | CR-1A  | 20-20                                | No   | 0.11                        |                                    | 70                              | B/C   | No  | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 11 7/8    | 395.00  |   |  |
| NIKKO         | D-400  | 20-19                                | Yes  | 0.006                       | 59                                 | 69                              | B/C/H   | M   | 0                                  | No              | No   | P   | E             | No                    | 0            | No           | 11        | 499.95  |   |  |
|               | D-600  | 20-21                                | Yes  | 0.006                       | 60                                 | 70                              | B/C/H   | M   | 0                                  | No              | No   | P   | E             | No                    | 0            | No           | 11        | 599.95  |   |  |
| ONKYO         | TA-2000  | 30-16 ±3                             | No   | 0.07                        | 58                                 | 78                              | B/C/H   |   | 3                                  | No              | No   | A   | T             | No                    | 0            | No           | 8.6       | 230.00  |   |  |
|               | TA-2200(RI)  | 30-18 ±3                             | No   | 0.07                        | 58                                 | 78                              | B/C/H   |   | 3                                  | Yes             | Yes  | PH  | T             | No                    | 0            | No           | 9.7       | 330.00  |   |  |
|               | TA-R200  | 30-16 ±3                             | No   | 0.07                        | 58                                 | 78                              | B/C/H   |   | 3                                  | Yes             | Yes  | A   | T             | No                    | 0            | No           | 8.6       | 260.00  |   |  |
|               | TA-R300(RI)  | 30-18 ±3                             | No   | 0.07                        | 58                                 | 78                              | B/C/H   |   | 3                                  | Yes             | Yes  | PH  | T             | Yes                   | 0            | No           | 9.9       | 360.00  |   |  |
|               | Integra  | 30-19 ±3                             | Yes  | 0.035                       | 60                                 | 80                              | B/C/H   |   | 3                                  | Yes             | Yes  | PH  | E/R           | No                    | 0            | No           | 12.8      | 480.00  | Three motors.                                     |  |
|               | TA-2600  |                                      |  |                             |                                    |                                 |   |   |                                    |                 |  |   |               |                       |              |              |           |         |   |  |
|               | Integra  | 20-20 ±3                             | Yes  | 0.035                       | 60                                 | 80                              | B/C/H   |   | 3                                  | Yes             | Yes  | PH  | E/R           | No                    | 0            | No           | 13.7      | 650.00  | As above; dual capstan; Dolby record calibration. |  |
|               | TA-2800(RI)  | 25-21 ±3                             | Yes  | 0.02                        | 60                                 | 80                              | B/C/D/H   |   | 3                                  | Yes             | Yes  | PH  | E/R           | No                    | 0            | No           | 19.8      | 950.00  | As above.   |  |
| TA-2090       | 30-16 ±3   | No                                   | 0.07                                       | 58                          | 78                                 | B/C/H                           |   | 3   | No                                 | No              | PH   | T   | Yes           | 0                     | Yes          | 10.6         | 340.00    |         |   |  |
| TA-RW400 (RO) | 30-16 ±3   | No                                   | 0.06                                       | 58                          | 78                                 | B/C                             |   | 3   | No                                 | No              | PH   | E/R   | Yes           | 1                     | Yes          | 13.2         | 500.00    |         |   |  |
| TA-RW470 (RO) | 30-16 ±3   | No                                   | 0.06                                       | 58                          | 78                                 | B/C                             |   | 3   | No                                 | No              | PH   | E/R   | Yes           | 1                     | Yes          | 13.6         | 630.00    |         |   |  |
| TA-RW490 (RO) | 30-16 ±3   | No                                   | 0.06                                       | 58                          | 78                                 | B/C/H                           |   | 3   | Yes                                | Yes             | PH   | E/R   | Yes           | 1                     | Yes          | 13.6         | 630.00    |         |   |  |
| PARASOUND     | D/HX-600   | 30-16 ±2                             |  | 0.04                        | 52                                 | 75                              | B/C/H   |   | 3                                  |                 |  | PH  | T             | No                    | 0            | No           | 15        | 360.00  | "Playtrim" adjustment.                            |  |
|               | D/HX-550   | 30-19 ±2                             |  | 0.04                        | 58                                 | 77                              | B/C/H   |   | 3                                  |                 |  | PH  | T             | No                    | 0            | No           | 15        | 285.00  | As above.   |  |
| PHILIPS       | FC60   | 20-20 ±3                             | Yes  | 0.035                       | 65                                 | 78                              | B/C/H   | M   | 3                                  | Yes             | Yes  | P/PH  | T/E           |                       |              |              | 14 1/2    | 549.00  | Dual capstan; record calibration.                 |  |
|               | FC50   | 40-19 ±3                             | No   | 0.05                        | 60                                 | 73                              | B/C/H   | M   | 3                                  | Yes             | Yes  | P/PH  | T/E           |                       |              |              | 11 3/4    | 379.00  | Switchable MPX filter.                            |  |
|               | FC40   | 40-19 ±3                             | No   | 0.06                        | 60                                 | 73                              | B/C/H   | M   | 3                                  |                 |  | P   | T             | Yes                   | 1            | Yes          | 11 3/4    | 299.00  | As above.   |  |
|               | FC567  | 30-18                                | No   | 0.04                        | 60                                 | 73                              | B/C   |   | 3                                  | Yes             | Yes  | P   | T             | Yes                   | 1            | Yes          | 11 3/4    | 479.00  | Mike mixing.                                      |  |
| PIONEER       | CT-W910R   | 18-18.5                              | No   | 0.055                       | 58                                 | 77                              | B/C/H   | A   | 3                                  | Yes             | Yes  | A/PH  | T             | Yes                   | Yes          | Yes          | 13 1/4    | 650.00  | Twin HX Pro.                                      |  |
|               | CT-710R  | 25-18                                | No   | 0.055                       | 57                                 | 76                              | B/C/H   | A   | 3                                  | Yes             | Yes  | A/PH  | T             | Yes                   | Yes          | Yes          | 11 3/4    | 450.00  |   |  |
|               | CT-W600R   | 25-18                                | No   | 0.055                       | 57                                 | 76                              | B/C/H   | A   | 3                                  | Yes             | Yes  | A/P   | T             | Yes                   | Yes          | Yes          | 11 3/4    | 360.00  |   |  |
|               | CT-W510  | 25-16                                | No   | 0.06                        | 56                                 | 75                              | B/C   | A   | 3                                  | Yes             | Yes  | A/P   | T             | No                    | Yes          | Yes          | 11 3/4    | 310.00  |   |  |
|               | CT-W310  | 35-16                                | No   | 0.13                        | 56                                 | 75                              | B/C   | A   | 3                                  | No              | No   | A/P   | T             | No                    | Yes          | 8 5/8        | 225.00    |         |   |  |
|               | CT-S705  | 20-21                                | Yes  | 0.05                        | 58                                 | 77                              | B/C/H   | A/M   | 3                                  | Yes             | Yes  | A/PH  | T/E           | No                    | No           | 13           | 480.00    |         |   |  |
|               | CT-S605  | 25-18                                | No   | 0.055                       | 58                                 | 77                              | B/C/H   | A/M   | 3                                  | Yes             | Yes  | A/PH  | T/E           | No                    | No           | 11           | 375.00    |         |   |  |
|               | CT-S405  | 25-17                                | No   | 0.075                       | 57                                 | 76                              | B/C/H   | A   | 3                                  | Yes             | Yes  | A/PH  | T             | No                    | No           | 9 1/4        | 230.00    |         |   |  |
|               | CT-S305  | 25-17                                | No   | 0.075                       | 57                                 | 76                              | B/C   | A   | 3                                  | No              | Yes  | A/PH  | T             | No                    | No           | 9 1/4        | 200.00    |         |   |  |
|               | PROTON   | AD-630(RI)                           | 30-17 ±3                                   | Yes                         | 0.05                               | 54                              | 90  | B/C/D   | A                                  | 3               | Yes  | Yes   | P             | E/R                   | Yes          | 2            | No        | 18.7    | 800.00  |  |
|               |  | 740                                  | 25-16 ±3                                   |                             | 0.05                               | 54                              | 90  | B/C/D   |                                    | 3               | Yes  | No  | A/P           | E/R                   | Yes          | 2            | No        | 11.2    | 349.00  |  |
| AD-300(RO)    |  | 40-15 ±3                             |  | 0.05                        | 54                                 | 90                              | B/C/D   |   | 3                                  | No              | No   | P   | E/R           | Yes                   | 2            | No           | 10.6      | 319.00  |   |  |
| AD-200        |  | 40-15 ±3                             | No   | 0.08                        | 54                                 | 71                              | B/C   |   | 3                                  | No              | No   | P   | E/R           | Yes                   | 0            | No           | 8.8       | 229.00  |   |  |
| REVOX         | B215(RO)   | 30-20 +2,-3                          | Yes  | †                           | 58                                 | 72                              | B/C/H   | A   | 6                                  | Yes             | No   | P   | E             | No                    | 0            | No           | 20 1/4    | 2300.00 | †0.1%, DIN wtd. Pivoting headblock.               |  |
|               | B215S(RO)  | 30-20 +2,-3                          | Yes  | †                           | 58                                 | 72                              | B/C/H   | A   | 6                                  | Yes             | No   | P   | E             | No                    | 0            | No           | 20 1/4    | 2800.00 |   |  |
| ROTEL         | R0845  | 30-18 ±3                             | No   | 0.08                        | 55                                 | 73                              | B/C   |   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 9         | 249.00  |   |  |
|               | RD855  | 30-19 ±3                             | No   | 0.035                       | 55                                 | 73                              | B/C   |   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 11        | 349.00  |   |  |
|               | RD65   | 30-20 ±3                             | No   | 0.035                       | 55                                 | 73                              | B/C/H   | M   | 3                                  | No              | No   | P   | T             | No                    | 0            | No           | 11        | 449.00  |   |  |
| SAE           | C102   | 20-20 ±3                             | No   | 0.04                        | 55                                 | 74                              | B/C   |   | 3                                  | Yes             | No   | A/PH  | T/E/R         | No                    | 0            | No           | 24        | 499.00  |   |  |
| SANSUI        | Vintage O-X701   | 30-20                                | Yes  | 0.035                       | 60                                 | 74                              | B/C   |   | 3                                  | Yes             | Yes  | P   | T             | No                    | 0            | No           | 13 1/4    | 700.00  | Dual capstan.                                     |  |
|               | D-X301R  | 20-19                                | Yes  | 0.05                        | 55                                 | 65                              | B/C/H   |   | 3                                  | Yes             | Yes  | P   | T             | Yes                   | 2            | No           | 10        | 360.00  | Timer record/play.                                |  |
|               | D-X301i  | 20-21                                | Yes  | 0.05                        | 55                                 | 65                              | B/C/H   |   | 3                                  | Yes             | Yes  | P   | T             | No                    | 0            | No           | 11 3/4    | 350.00  | As above.   |  |
|               | D-3000WR   | 40-15                                | Yes  | 0.09                        | 54                                 | 72                              | B/C   |   | 3                                  | Yes             | Yes  | P   | T             | Yes                   | 0            | Yes          | 10 3/4    | 380.00  |   |  |
|               | D-1000W  | 20-17                                | Yes  | 0.09                        | 54                                 | 72                              | B/C   |   | 3                                  | Yes             | Yes  | P   | T             | No                    | 0            | Yes          | 9 3/4     | 310.00  |   |  |
|               | D-900W   | 40-15                                | Yes  | 0.2                         | 53                                 | 63                              | B   |   | 3                                  | Yes             | Yes  | P   | T             | No                    | 0            | Yes          | 8         | 240.00  |   |  |
| D-550WR       | 50-13  | Yes                                  | 0.2  | 50                          | 60                                 | B                               |   | 3   | Yes                                | Yes             | P  | T   | Yes           | 0                     | Yes          | 9 1/4        | 230.00    |         |   |  |
| SANYO         | RDW41A   | 60-14 ±3                             | Yes  | 0.08                        | 57                                 | 66                              | B   |   | 3                                  | No              | No   | P   | T             | No                    | 0            | Yes          | 7.3       |         |   |  |
|               | RDW389   | 40-16 ±3                             | Yes  | 0.08                        | 56                                 | 71                              | B/C   |   | 3                                  | No              | No   | P   | T             | No                    | 0            | Yes          | 6.8       | 99.99   |   |  |
|               | RDW489   | 40-16 ±3                             | Yes  | 0.08                        | 56                                 | 71                              | B/C   |   | 3                                  | No              | No   | P   | T             | No                    | 0            | Yes          | 7.5       | 149.99  |   |  |
|               | RDW589   | 40-16 ±3                             | Yes  | 0.08                        | 55                                 | 70                              | B/C   |   | 3                                  | No              | No   | P   | T             | No                    | 2            | Yes          | 7.5       | 169.99  | Full and four-track; high-speed dubbing.          |  |
| SCOTT         | DD660  | 50-13                                | Yes  |                             |                                    | 64                              | B   |   | 6                                  |                 |  | P   | T             |                       | 0            |              |           |         |   |  |
|               | OD700  | 30-13                                | Yes  |                             |                                    | 64                              | B   |   | 6                                  | Yes             |  | P   | T             | Yes                   | 0            |              |           |         |   |  |
|               | OD900  | 30-15                                | Yes  |                             |                                    | 65                              | B   |   | 6                                  |                 |  | P   | T             | Yes                   | 0            |              |           |         |   |  |
| SHARP         | RT-W500  | 30-16                                | Yes  | 0.01                        | 52                                 | 62                              | B   | A   |                                    | Yes             |  | A/P   | T             | No                    | 2            | Yes          | 7.3       | 149.95  |   |  |
|               | RT-W800  | 30-17                                | Yes  | 0.08                        | 56                                 | 66                              | B   | A   |                                    | Yes             |  | A/P   | T             | No                    | 2            | Yes          | 7.5       | 269.95  |   |  |
| SHERWOOD      | OS-7000R (RO)  | 25-20 ±6                             | Yes  | 0.06                        | 58                                 | 75                              | B/C/H   |   | 3                                  | Yes             | No   | A/PH  | E             | No                    | 2            | No           | 13 1/2    | 449.95  | Two line inputs/outputs; cross fader control.     |  |
| (Continued)   | OS-1630R (RO)  | 25-19 ±6                             | Yes  | 0.08                        | 57                                 | 75                              | B/C/H   |   | 3                                  | Yes             | No   | A/PH  | E             | Yes                   | 0            | No           | 12 7/8    | 269.95  | As above.   |  |

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# CASSETTE DECKS

| MANUFACTURER         | Model (RI) = Remote Included, (RO) = Remote Optional | Frequency Response, Hz to kHz, $\pm$ dB | Response with Best Tape, $\pm$ dB | Monitoring During Recording? | Wow & Flutter, Wtd. Peak, % | S/N without Noise Reduction, dB | S/N with Noise Reduction, dB | Noise Reduction Circuit, Dolby B = B, C = C, CR = C, X = X, Pro = H, Other = O | Bias Adjustment, Auto = A, Manual = M | Number of Preset Bias/EQ Positions | Program Search? | Program Scan? | Level Indicator, Average = A, Peak = P, Peak-Hold = PH | Counting Indicator, Number of Tapes = T, Replays Time = E, Remaining Time = R | Auto Reverse? | Number of Mike Inputs | Dual Wells? | Weight, Lbs. | Price, \$ | Notes                                   |
|----------------------|--|---|-----------------------------------|------------------------------|-----------------------------|---------------------------------|------------------------------|--|---------------------------------------|------------------------------------|-----------------|---------------|--|---|---------------|-----------------------|-------------|--------------|-----------|---|
| SHERWOOD (Continued) | DD-1230R (RO)  | 25-18 $\pm$ 6                           | Yes                               | 0.12                         | 57                          | 75                              | B/C                          |  | 3                                     | Yes                                | No              | A/PH          | E  | Yes   | 0             | Yes                   | 13%         | 279.95       |           |   |
|                      | DD-1030  | 30-15.5 $\pm$ 6                         | Yes                               | 0.15                         | 56                          | 65                              | B                            |  | 3                                     | No                                 | No              | A/P           | E  | No  | 0             | Yes                   | 7%          | 129.95       |           |   |
|                      | DD-1130  | 30-16 $\pm$ 6                           | Yes                               | 0.12                         | 56                          | 74                              | B/C                          |  | 3                                     | No                                 | No              | A/P           | E  | No  | 0             | Yes                   | 9 7/8       | 149.95       |           |   |
|                      | DD-1032C (RO)  | 30-15.5 $\pm$ 6                         | Yes                               | 0.15                         | 56                          | 65                              | B                            |  | 3                                     | No                                 | No              | A/P           | E  | No  | 0             | Yes                   | 7 7/8       | 139.95       |           |   |
|                      | DS-1135C (RO)  | 30-16.5 $\pm$ 6                         | Yes                               | 0.08                         | 57                          | 72                              | B/C/H                        |  | 3                                     | No                                 | No              | A/P           | E  | No  | 1             | No                    | 9           | 189.95       |           |   |
| SONY                 | TC-WR810 (RO)  | 30-17 $\pm$ 3                           |                                   | 0.09                         | 58                          | 71                              | B/C/H                        |  | 3                                     | Yes                                |                 | P             | T  | Yes   |               | Yes                   | 10 1/2      | 500.00       |           |   |
|                      | TC-WR710 (RO)  | 30-15 $\pm$ 3                           |                                   | 0.09                         | 58                          | 71                              | B/C/H                        |  | 3                                     | Yes                                |                 | P             | T  | Yes   |               | Yes                   | 9 1/2       | 350.00       |           |   |
|                      | TC-WR610 (RO)  | 30-15 $\pm$ 3                           |                                   | 0.09                         | 58                          | 71                              | B/C                          |  | 3                                     | Yes                                |                 | P             | T  | Yes   |               | Yes                   | 9 1/2       | 315.00       |           |   |
|                      | TC-WR510 (RO)  | 30-15 $\pm$ 3                           |                                   | 0.12                         | 58                          | 71                              | B/C                          |  | 3                                     |                                    |                 | P             | T  | Yes   |               | Yes                   | 8 1/4       | 245.00       |           |   |
|                      | TC-W310  | 30-15 $\pm$ 3                           |                                   | 0.12                         | 58                          | 71                              | B/C                          |  | 3                                     |                                    |                 | P             | T  |   |               | Yes                   | 7 1/2       | 210.00       |           |   |
|                      | TC-RX410 (RO)  | 30-15 $\pm$ 3                           |                                   | 0.09                         | 58                          | 71                              | B/C/H                        |  | 3                                     |                                    |                 | P             | T  | Yes   | 2             |                       | 8 3/8       | 240.00       |           |   |
|                      | TC-FX110   | 30-15 $\pm$ 3                           |                                   | 0.12                         | 58                          | 71                              | B/C                          |  | 3                                     |                                    |                 | P             | T  |   |               |                       | 7 3/4       | 145.00       |           |   |
| SONY ES              | TC-WR11ES (RI)                                       | 20-20 $\pm$ 3                           |                                   | 0.05                         | 59                          | 72                              | B/C                          |  | 3                                     | Yes                                |                 | P             | E/R  | Yes   |               | Yes                   | 10 1/2      | 800.00       |           |   |
|                      | TC-WR10ES (RO)                                       | 20-20 $\pm$ 3                           |                                   | 0.09                         | 58                          | 71                              | B/C                          |  | 3                                     | Yes                                |                 | P             | E/R  | Yes   |               | Yes                   | 10 1/2      | 550.00       |           |   |
|                      | TC-WR8ES (RO)  | 20-20 $\pm$ 3                           |                                   | 0.09                         | 58                          | 71                              | B/C/H                        |  | 3                                     | Yes                                |                 | P             | E/R  | Yes   |               | Yes                   | 10          | 430.00       |           |   |
|                      | TC-K730ES (RO)                                       | 20-21 $\pm$ 3                           | Yes                               | 0.025                        | 60                          | 73                              | B/C                          | M  | 3                                     |                                    |                 | PH            | E/R  |   |               | No                    | 21          | 850.00       |           |   |
|                      | TC-K630ES (RO)                                       | 20-21 $\pm$ 3                           | Yes                               | 0.05                         | 59                          | 72                              | B/C/H                        |  | 3                                     | Yes                                | Yes             | PH            | E/R  |   |               | No                    | 11 1/2      | 450.00       |           |   |
|                      | TC-RX55ES (RO)                                       | 20-20 $\pm$ 3                           |                                   | 0.09                         | 58                          | 71                              | B/C/H                        |  | 3                                     |                                    |                 | P             | T  | Yes   | 2             | No                    | 8 1/2       | 300.00       |           |   |
|                      |  |   |                                   |                              |                             |                                 |                              |  |                                       |                                    |                 |               |  |   |               |                       |             |              |           |   |
| TANDBERG             | TCD-3014A  | 18-23 $\pm$ 1.5                         | Yes                               | †                            |                             | 74                              | B/C                          | M  | 3                                     | Yes                                | No              | P             | T/E  | No  | 0             | Yes                   | 21.6        |              |           | †0.06%, DIN wtd.                        |
| TEAC                 | V-250  | 30-16                                   | No                                | 0.095                        | 55                          | 65                              | B                            | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | No                    | 6.3         | 119.95       |           |   |
|                      | V-270C   | 30-16                                   | No                                | 0.095                        | 55                          | 70                              | B/C                          | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | No                    | 6.3         | 139.95       |           |   |
|                      | V-285CHX   | 30-16                                   | No                                | 0.095                        | 55                          | 70                              | B/C/H                        | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | No                    | 6.3         | 149.95       |           |   |
|                      | V-480  | 30-18                                   | No                                | 0.07                         | 59                          | 74                              | B/C/H                        | M  | 3                                     | No                                 | No              | P             | T/E  | No  | 0             | No                    | 9.9         | 199.95       |           |   |
|                      | V-570  | 20-19                                   | No                                | 0.06                         | 59                          | 74                              | B/C/H                        | M  | 3                                     | No                                 | No              | P             | T/E  | No  | 0             | No                    | 11          | 349.95       |           |   |
|                      | R-445  | 30-17                                   | No                                | 0.06                         | 55                          | 70                              | B/C                          | M  | 3                                     | No                                 | Yes             | P             | T  | Yes   | 0             | No                    | 6.6         | 209.95       |           |   |
|                      | R-445CHX   | 30-17                                   | No                                | 0.06                         | 55                          | 70                              | B/C/H                        | M  | 3                                     | No                                 | Yes             | P             | T  | Yes   | 0             | No                    | 6.6         | 219.95       |           |   |
|                      | R-540(RO)  | 30-19                                   | No                                | 0.07                         | 59                          | 74                              | B/C/H                        | M  | 3                                     | No                                 | No              | P             | T  | Yes   | 0             | No                    | 10.5        | 289.95       |           |   |
|                      | R-616X   | 25-20                                   | Yes                               | 0.05                         | 59                          | 90                              | B/C                          | M  | 3                                     | Yes                                | Yes             | P             | T/E  | Yes   | 0             | No                    | 11          | 499.95       |           |   |
|                      | W-350  | 30-16                                   | Yes                               | 0.095                        | 55                          | 65                              | B                            | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | Yes                   | 7           | 169.95       |           |   |
|                      | W-370C   | 30-16                                   | Yes                               | 0.095                        | 55                          | 70                              | B/C                          | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | Yes                   | 7           | 199.95       |           |   |
|                      | W-450R   | 30-17                                   | No                                | 0.06                         | 55                          | 70                              | B/C/H                        | M  | 3                                     | No                                 | Yes             | P             | T  | Yes   | 2             | Yes                   | 10.1        | 289.95       |           |   |
|                      | W-470  | 30-18                                   | No                                | 0.07                         | 59                          | 74                              | B/C                          | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | Yes                   | 10.5        | 249.95       |           |   |
|                      | W-550R   | 30-19                                   | No                                | 0.07                         | 59                          | 74                              | B/C/H                        | M  | 3                                     | No                                 | Yes             | P             | T  | Yes   | 0             | Yes                   | 12.1        | 399.95       |           |   |
|                      | V-670  | 20-21                                   | Yes                               | 0.06                         | 60                          | 80                              | B/C/H                        | M  | 3                                     | No                                 | No              | P             | T/E  | No  | 0             | No                    | 11          | 449.95       |           |   |
|                      | V-970X(RI)   | 25-20 $\pm$ 3                           | Yes                               | 0.028                        | 60                          | 92                              | B/C/D                        | M  | 3                                     | Yes                                | Yes             | P             | T/E  | No  | 0             | No                    | 12.8        | 799.95       |           | MPX filter. CD level check.             |
|                      | R-919X(RI)   | 25-20 $\pm$ 3                           | Yes                               | 0.029                        | 60                          | 92                              | B/C/D                        | M  | 3                                     | Yes                                | Yes             | P             | T/E  | No  | 0             | No                    | 13.3        | 829.95       |           | As above.                               |
|                      | W-990RX(RI)  | 30-19 $\pm$ 3                           | No                                | 0.045                        | 59                          | 91                              | B/C/D                        | M  | 3                                     | Yes                                | Yes             | P             | T  | Yes   | 0             | Yes                   | 13.3        | 799.95       |           | As above.                               |
| TECHNICS             | RS-B905  | 30-20 $\pm$ 3                           | Yes                               | 0.04                         | 57                          | 92                              | B/C/D                        | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | No                    | 12          | 619.00       |           | Closed-loop dual capstan.               |
|                      | RS-B755  | 30-20 $\pm$ 3                           | Yes                               | 0.04                         | 59                          | 94                              | B/C/D                        | M  | 3                                     | No                                 | No              | P             | T  | No  | 2             | No                    | 12          | 439.00       |           | As above.                               |
|                      | RS-B605  | 20-18 $\pm$ 3                           | No                                | 0.06                         | 56                          | 91                              | B/C/D                        | M  | 3                                     | No                                 | No              | P             | T  | No  | 2             | No                    | 11          | 359.00       |           |   |
|                      | RS-B555  | 20-18 $\pm$ 3                           | No                                | 0.06                         | 56                          | 91                              | B/C/H                        | M  | 3                                     | No                                 | No              | P             | T  | No  | 2             | No                    | 10          | 299.00       |           |   |
|                      | RS-TR555   | 20-19 $\pm$ 3                           | No                                | 0.07                         | 56                          | 92                              | B/C/D                        | M  | 3                                     | Yes                                |                 | P             | T  | Yes   | 0             | Yes                   | 12          | 439.00       |           | Quick-reverse and record in both wells. |
|                      | RS-TR355   | 20-19 $\pm$ 3                           | No                                | 0.1                          | 56                          | 74                              | B/C/H                        | M  | 3                                     | No                                 |                 | P             | T  | Yes   | 0             | Yes                   | 12          | 329.00       |           |   |
|                      | RS-TR255   | 20-19 $\pm$ 3                           | No                                | 0.1                          | 56                          | 74                              | B/C                          | M  | 3                                     | No                                 |                 | P             | T  | Yes   | 0             | Yes                   | 12          | 229.00       |           |   |
|                      | RS-TR155   | 20-19 $\pm$ 3                           | No                                | 0.1                          | 56                          | 66                              | B                            | M  | 3                                     | No                                 |                 | P             | T  | Yes   | 0             | Yes                   | 12          | 209.00       |           |   |
| UHER                 | CR 1600  | 30-16 $\pm$ 1                           | Yes                               | 0.3                          | 52                          | 60                              | B                            | A  | 4                                     | Yes                                | Yes             | P             | T  | Yes   | 1             | No                    | 7           | 1849.00      |           | 8-hour record time.                     |
|                      | CR 1601  | 20-19 $\pm$ 1                           | Yes                               | 0.2                          | 50                          |                                 |                              |  |                                       | Yes                                | Yes             | P             | T  | No  | 1             | No                    | 7           | 1849.00      |           | As above.                               |
| VECTOR RESEARCH      | VCX-325  | 40-14 $\pm$ 3                           | No                                | 0.08                         | 52                          | 63                              | B                            | M  | 3                                     | No                                 | No              | P             | T  | No  | 2             | Yes                   | 10          | 159.95       |           |   |
|                      | VCX-255  | 30-18 $\pm$ 3                           | No                                | 0.05                         | 56                          | 75                              | B/C                          | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | No                    | 11 1/2      | 179.95       |           |   |
|                      | VCX-270  | 30-20 $\pm$ 3                           | No                                | 0.05                         | 60                          | 75                              | B/C/H                        | M  | 3                                     | Yes                                | No              | P             | T  | No  | 2             | No                    | 14          | 349.95       |           |   |
|                      | VCX-450  | 30-18 $\pm$ 3                           | No                                | 0.04                         | 56                          | 75                              | B/C                          | M  | 3                                     | Yes                                | Yes             | P             | T  | Yes   | 2             | No                    | 16          | 399.95       |           |   |
| YAMAHA               | KX-300(RI)   | 30-20 $\pm$ 3                           | No                                | 0.08                         | 60                          | 76                              | B/C                          | M  | 3                                     | Yes                                | Yes             | P             | T  | No  | 0             | No                    | 9 1/4       | 299.00       |           |   |
|                      | KX-230(RO)   | 20-19 $\pm$ 3                           | No                                | 0.08                         | 58                          | 74                              | B/C                          | M  | 3                                     | Yes                                | Yes             | P             | T  | No  | 0             | No                    | 9 1/4       | 269.00       |           |   |
|                      | KX-130   | 20-16 $\pm$ 3                           | No                                | 0.15                         | 58                          | 74                              | B/C                          | M  | 3                                     | No                                 | No              | P             | T  | No  | 0             | No                    | 8 7/8       | 219.00       |           |   |
|                      | KXW900U (RI)   | 20-20 $\pm$ 3                           | No                                | 0.08                         | 58                          | 74                              | B/C/H                        | M  | 3                                     | Yes                                | Yes             | P             | R  | Yes   | 0             | Yes                   | 15 3/8      | 699.00       |           |   |
|                      | KXW602(RI)   | 20-20 $\pm$ 3                           | No                                | 0.08                         | 58                          | 74                              | B/C/H                        | M  | 3                                     | Yes                                | No              | P             | R  | Yes   | 0             | Yes                   | 12 1/8      | 519.00       |           |   |
|                      | KXW302U (RO)   | 20-20 $\pm$ 3                           | No                                | 0.15                         | 58                          | 74                              | B/C/H                        | M  | 3                                     | Yes                                | No              | P             | T  | Yes   | 0             | Yes                   | 10 3/8      | 449.00       |           |   |
|                      | KXW202U (RO)   | 20-18 $\pm$ 3                           | No                                | 0.15                         | 58                          | 74                              | B/C                          | M  | 3                                     | Yes                                | No              | P             | T  | No  | 0             | Yes                   | 9 7/8       | 349.00       |           |   |
|                      | KX-1200U (RI)  | 20-24 $\pm$ 3                           | Yes                               | 0.06                         | 61                          | 95                              | B/C/D                        | A/M  | 3                                     | Yes                                | Yes             | P             | E/R  | No  | 0             | No                    | 17 3/8      | 749.00       |           |   |
|                      | KX-R700U (RI)  | 20-20 $\pm$ 3                           | No                                | 0.08                         | 60                          | 90                              | B/C/D                        | A/M  | 3                                     | Yes                                | Yes             | P             | E/R  | Yes   | 0             | No                    | 12 3/4      | 579.00       |           |   |
|                      | KX-800U(RI)  | 20-22 $\pm$ 3                           | Yes                               | 0.08                         | 61                          | 90                              | B/C/D                        | A/M  | 3                                     | Yes                                | Yes             | P             | E/R  | No  | 0             | No                    | 10 5/8      | 569.00       |           |   |
|                      | KX-630(RI)   | 20-20 $\pm$ 3                           | Yes                               | 0.08                         | 60                          | 76                              | B/C                          | M  | 3                                     | Yes                                | Yes             | P             | E/R  | No  | 0             | No                    | 10 3/8      | 469.00       |           |   |
|                      | K-640B   | 20-20 $\pm$ 3                           | No                                | 0.08                         | 59                          | 75                              | B/C/H                        | M  | 3                                     | Yes                                | Yes             | P             | E/R  | Yes   | 2             | No                    | 11 1/2      | 449.00       |           |   |
|                      | KX-500U(RI)  | 20-20 $\pm$ 3                           | No                                | 0.08                         | 60                          | 76                              | B/C/H                        | M  | 3                                     | Yes                                | Yes             | P             | E/R  | No  | 0             | No                    | 9 7/8       | 399.00       |           |   |
|                      | KX-R430(RI)  | 20-19 $\pm$ 3                           | No                                | 0.08                         | 58                          | 74                              | B/C/H                        | M  | 3                                     | Yes                                | Yes             | P             | T  | Yes   | 0             | No                    | 9 1/2       | 349.00       |           |   |
|                      | YST K-W90M   | 30-16 $\pm$ 3                           | No                                | 0.15                         | 58                          | 74                              | B/C                          | M  | 3                                     | Yes                                | No              | P             | T  | Yes   | 0             | Yes                   |             | 580.00       |           |   |

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| ANALOG CASSETTE<br>TAPE TYPE CODE<br>I — Normal Ferric<br>II — Chroma/Chrome Equivalent<br>IV — Metal Particle |   | ANALOG CASSETTES   |              |  |  |                              |               | OPEN-REEL |                |           |           | DAT CASSETTES |       |       |       | Notes  |
|--|---|--|--------------|--|--|------------------------------|---------------|-----------|----------------|-----------|-----------|---------------|-------|-------|-------|--|
| MANUFACTURER   | Brand   | Tape Type—See Code   |              |  |  |                              |               | 1200 Feet | 1800 Feet      | 2400 Feet | 3600 Feet | R-16          | R-50  | R-90  | R-120 |  |
|  |   | C-30   | C-45 or C-46 | C-60   | C-90   | C-120                        |               |           |                |           |           |               |       |       |       |  |
| BASF   | Ferro Extra I<br>Ferro Super I<br>Ferro Maxima I<br>Chrome Extra II<br>Chrome Maxima II<br>Metal Maxima IV<br>DAT | I<br>I<br>I<br>II<br>II<br>IV                                    |              | 1.49<br>1.94<br>2.59<br>2.69<br>3.29   | 1.69<br>2.54<br>2.89<br>2.99<br>4.29   | 2.19<br><br>3.29<br><br>6.49 |               |           |                |           |           |               | 9.99  | 10.99 | 11.99 | C-100, \$1.89.<br><br>C-100, \$3.19.   |
| BLACK WATCH/3M   | 4040<br>2020<br>226<br>227<br>7707  | IV<br>II   |              |  |  |                              | 10.00         | 15.00     | 20.00†         | 25.00     |           |               |       |       | 20.00 | C-76, \$7.00; C-100, \$9.00.<br>C-76, \$4.00; C-100, \$6.00.<br>‡2500 feet.  |
| CERTRON  | High Density  | I  | 1.19         | 1.29   | 1.39   | 1.79                         | 2.49          |           |                |           |           |               |       |       |       |  |
| GENON  | HDM<br>HD8<br>HD7<br>HD6<br>DX1   | IV<br>II<br>II<br>II<br>I  |              | 4.50<br>3.75<br>3.00<br>2.50<br>3.00   | 5.50<br>4.75<br>4.00<br>3.25<br>4.00   |                              |               |           |                |           |           |               |       |       |       | C-75, \$4.99; C-100, \$5.99.<br>C-75, \$4.25; C-100, \$4.99.<br>C-75, \$3.50.<br>C-75, \$2.75; C-100, \$3.50.  |
| DIC DIGITAL  | XR  |  |              |  |  |                              |               |           |                |           | 8.99      | 10.99         | 12.99 | 14.99 |       | R-15, \$6.99; R-30, \$7.99.  |
| FUJI   | DR-I<br>DR-II<br>FR-IIX<br>FR-IIX Pro<br>FR-Metal<br>DAT  | I<br>II<br>II<br>II<br>IV  |              | 1.49<br>2.49<br>3.49<br>4.49<br>5.49   | 1.99<br>2.99<br>3.99<br>4.99<br>5.99   |                              |               |           |                |           |           | 10.95         | 11.95 | 12.95 |       | C-74, \$3.79.<br>C-74, \$4.79.   |
| LORAN  | ESQ<br>H8<br>PRO-DAT  | II<br>II   | 2.99         | 3.49   | 4.99<br>3.99   |                              |               |           |                |           | 6.80      | 7.50          | 9.00  | 10.50 |       | Custom lengths available.  |
| MAXELL   | MX<br>XLI-S<br>XLI-S<br>XLI-S<br>UDI<br>UDI<br>UR<br>DAT<br>XLI Back Coated<br>Ultra Dynamic                      | IV<br>II<br>I<br>II<br>II<br>I<br>I                              | 3.29         | 4.39<br>3.59<br>3.59<br>3.29<br>2.49<br>2.49<br>1.49                                 | 5.29<br>4.39<br>4.39<br>3.99<br>3.29<br>3.29<br>1.79                                 | 2.79                         | 12.79<br>9.19 |           | 35.79<br>28.39 | 8.99      | 10.99     | 12.99         | 14.99 |       |       | C-100, \$5.99.<br>C-100, \$4.99.<br>C-100, \$4.39.   |
| MEMOREX  | dBS<br>MRX<br>HBS II<br>HBS II<br>CDX   | I<br>I<br>II<br>II<br>II   | 1.10<br>1.59 | 1.19<br>1.79<br>1.79<br>2.39   | 1.49<br>2.29<br>1.99<br>3.19<br>3.99   | 1.99                         |               |           |                |           |           |               |       |       |       | C-100, \$2.29.   |
| NAKAMICHI  | ZX-C90<br>SXII-C90<br>SX-C90<br>EXII-C90<br>R-DAT Tape  | IV<br>II<br>II<br>I  |              |  | 10.00<br>8.90<br>6.50<br>6.00  |                              |               |           |                |           |           |               |       |       |       |  |
| RECOTON  | XR90-10<br>SX60-2   |  |              | 3.99†  | 13.99†   |                              |               |           |                |           |           |               |       |       |       | †Ten-pack.<br>‡Two-pack.   |
| SCOTCH/3M  | 8X<br>CX<br>XS-II<br>XSM-IV<br>DAT  | I<br>I<br>II<br>IV   |              | 1.69<br>2.40<br>2.99<br>4.49   | 1.95<br>2.99<br>3.79<br>5.99   |                              |               |           |                |           | 8.99      | 10.99         | 12.49 | 14.99 |       |  |
| SKC  | GX<br>AX<br>OX<br>CD<br>ZX  | I<br>I<br>II<br>II<br>IV   | 1.29<br>1.99 | 1.39<br>2.09<br>2.39<br>2.49<br>3.59   | 1.59<br>2.49<br>2.79<br>3.39<br>5.59   | 2.39                         |               |           |                |           |           |               |       |       |       | C-76, \$2.99; C-100, \$3.99.   |
| SONY   | HF<br>HF-S<br>UX<br>UX-S<br>UX-ES<br>UX-Pro<br>Metal-SR<br>Metal-ES<br>Metal Master                               | I<br>I<br>II<br>II<br>II<br>II<br>IV<br>IV<br>IV                 | 1.49         | 1.79<br>1.99<br>2.49<br>2.99<br>3.99<br>5.99   | 2.29<br>2.69<br>3.29<br>3.99<br>5.49<br>7.99<br>3.99<br>9.99<br>11.99                | 2.99                         |               |           |                |           |           |               |       |       |       | C-100, \$3.79.<br><br>C-100, \$4.49.   |
| TARA LABS  | Absolute Reference<br>"Apogee"  | II   |              |  | 7.95   |                              |               |           |                |           |           |               |       |       |       |  |
| TDK  | D<br>AD<br>AR<br>AR-X<br>SD<br>SA<br>SA-X<br>SA-XG<br>MA<br>MA-X<br>MA-XG<br>DA-R                                 | I<br>I<br>I<br>I<br>II<br>II<br>II<br>II<br>IV<br>IV<br>IV<br>IV | 1.50<br>1.60 | 1.75<br>2.25<br>2.50<br>2.50<br>2.25<br>2.50<br>3.00<br>6.50<br>3.50<br>4.25<br>7.00 | 2.00<br>2.50<br>2.75<br>3.00<br>2.50<br>3.00<br>3.50<br>8.75<br>4.00<br>5.00<br>9.25 | 2.50                         |               |           |                |           |           |               |       |       |       | C-100, \$3.50.<br><br>C-100, \$3.00.<br>C-76, \$2.75; C-100, \$4.00.<br>C-100, \$4.50.<br><br>C-110, \$5.25.   |
| THAT'S AMERICA   | CDII<br>CDI<br>CDIV<br>CDMH   | II<br>I<br>IV<br>II  |              |  | 4.51<br>2.83<br>5.99<br>5.31   |                              |               |           |                |           |           |               | 10.00 | 12.00 | 14.00 | C-74, \$4.13; C-100, \$5.10.<br>C-74, \$2.91; C-100, \$3.95.<br>C-74, \$5.79; C-100, \$7.35.<br>Type II metal-particle tape.<br>C-74, \$4.75, C-100, \$5.79. |

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# JEFF BAXTER AND DIC//DAT

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# MICROPHONES

| MANUFACTURER | Model           | Directional Pattern Plus Channels:<br>Stereo = X2, Quad = X4, M-S = M-S | Operating Principle | Case Material | Most Common Use | Actual Impedance, 1 kHz, Ohms:<br>Balanced = B | Operating Range, Hz to kHz | Open-Circuit Sensitivity,<br>1 kHz, -dB, re 1 Volt/1 $\mu$ bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment<br>End of Cable | Weight, Ounces | Wired Screen = W, On Off Switch = S,<br>Switched Low or Proximity Filter = F | Price, \$ | Notes  |
|--------------|-----------------|---|---------------------|---------------|-----------------|--|----------------------------|--|---------------------|--------------------|---|----------------|--|-----------|--|
| AKG          | D-58E           | Card.   | Dynamic             | Nckl./Brass   | Noisy Envrn.    | 240B   | 70-12                      | 83   | XLR                 |                    |   | 1 1/2          |  | 125.00    | Noise cancelling.  |
|              | D-70M           | Card.   | Dynamic             | Plastic       | Record          | 600  | 50-18                      | 77   |                     | 15                 | Phone                                       | 6 3/4          |  | 75.00     |  |
|              | D-70ME          | Card.   | Dynamic             | Plastic       | Record          | 620B   | 50-18                      | 77   | XLR                 |                    |   | 6 3/4          |  | 85.00     |  |
|              | D-80            | Card.   | Dynamic             | Brass         | Record          | 210B   | 60-15                      | 76   | XLR                 | 15                 | Phone                                       | 7 3/8          | S  | 135.00    |  |
|              | D-80E           | Card.   | Dynamic             | Brass         | Record          | 210B   | 60-15                      | 76   | XLR                 |                    |   | 7 3/8          | S  | 140.00    |  |
|              | D-109           | Omni  | Dynamic             | Brass         | Voice           | 240B   | 70-12                      | 79   |                     | 30                 | Phone                                       | 5 3/8          |  | 125.00    | Lavalier.  |
|              | D-112           | Card.   | Dynamic             | Plastic       | Bass            | 200B   | 20-17                      | 75   | XLR                 |                    |   | 13 3/8         |  | 220.00    |  |
|              | D-125E          | Card.   | Dynamic             | Zinc Alloy    | Instr.          | 210B   | 100-18                     | 74   | XLR                 |                    |   | 8              |  | 170.00    |  |
|              | D-130E          | Omni  | Dynamic             | Zinc Alloy    | ENG             | 220B   | 50-13                      | 75   | XLR                 |                    |   | 9              |  | 130.00    |  |
|              | D-130NR         | Omni  | Dynamic             | Zinc Alloy    | ENG             | 220B   | 50-13                      | 75   | XLR                 |                    |   | 9              |  | 150.00    |  |
|              | D-190E          | Card.   | Dynamic             | Zinc Alloy    | General         | 280B   | 30-15                      | 73   | XLR                 |                    |   | 6 1/2          | S  | 135.00    |  |
|              | D-190ES         | Card.   | Dynamic             | Zinc Alloy    | General         | 280B   | 30-15                      | 73   | XLR                 |                    |   | 6 1/2          | S  | 155.00    |  |
|              | D-202E1         | Card.   | Dynamic             | Zinc Alloy    | Strings         | 300B   | 20-20                      | 76   | XLR                 |                    |   | 12             | F  | 425.00    | Two-way system.  |
|              | D-222EB         | Card.   | Dynamic             | Plastic       | Podium          | 320B   | 20-16                      | 77   | XLR                 |                    |   | 9              | F  | 350.00    |  |
|              | D-224E          | Card.   | Dynamic             | Plastic       | Acoust. Instr.  | 260B   | 20-20                      | 78   | XLR                 |                    |   | 10             | F  | 600.00    |  |
|              | D-310           | Card.   | Dynamic             | Zinc Alloy    | Vocal           | 270B   | 80-18                      | 78   | XLR                 |                    |   | 9              |  | 160.00    |  |
|              | D-310NR         | Card.   | Dynamic             | Zinc Alloy    | Vocal           | 270B   | 80-18                      | 78   | XLR                 |                    |   | 9              |  | 165.00    |  |
|              | D-310S          | Card.   | Dynamic             | Zinc Alloy    | Instr./Vocal    | 270B   | 80-18                      | 78   | XLR                 |                    |   | 9              | S  | 175.00    |  |
|              | D-321           | Hyper Card.   | Dynamic             | Zinc Alloy    | Vocal           | 300B   | 40-20                      | 77   | XLR                 |                    |   | 13 3/8         |  | 210.00    |  |
|              | D-321S          | Hyper Card.   | Dynamic             | Zinc Alloy    | Vocal           | 300B   | 40-20                      | 77   | XLR                 |                    |   | 11 1/2         | S  | 225.00    |  |
|              | D-330BT         | Hyper Card.   | Dynamic             | Zinc Alloy    | Vocal           | 370B   | 50-20                      | 78   | XLR                 |                    |   | 12             | F  | 250.00    |  |
|              | D-330NR         | Hyper Card.   | Dynamic             | Zinc Alloy    | Vocal           | 370B   | 50-20                      | 78   | XLR                 |                    |   | 12             | F  | 265.00    |  |
|              | D-510B          | Omni  | Dynamic             | Nckl./Brass   | Voice           | 230B   |                            | 79   | Attached            | 3 3/4              | None  | 11 1/2         |  | 140.00    | Gooseneck.   |
|              | D-541B          | Card.   | Dynamic             | Plastic       | Vocal           | 720B   | 120-16                     | 73   | Attached            | 3 3/4              | None  | 12 1/2         |  | 115.00    | As above.  |
|              | D-558B          | Card.   | Dynamic             | Nckl./Brass   | Voice           | 200B   | 70-15                      | 83   | Attached            | 3 3/4              | None  | 11 1/2         |  | 160.00    |  |
|              | D-590           | Card.   | Dynamic             | Nckl./Brass   | Vocal           | 230B   | 150-17                     | 78   | Attached            | 3 3/4              | None  | 10             |  | 170.00    | As above.  |
|              | D-900E          | Super Card.   | Dynamic             | Lacq. Nickel  | ENG             | 240B   | 60-12                      | 70   | XLR                 |                    |   | 18             | F  | 430.00    | Long shotgun.  |
|              | D-1200E         | Card.   | Dynamic             | Zinc Alloy    | General         | 200B   | 25-17                      | 73   | XLR                 |                    | None  | 8 1/2          | F  | 250.00    |  |
|              | C-426           | Multiple x2   | Condenser           | Zinc Alloy    | Drch.           | 200B   | 20-20                      |  | 12-Pin              | 60                 | XLR   | W              |  | 3995.00   | Remote pattern control.  |
|              | AKG Tube        | Multiple  | Condenser           | Zinc Alloy    | Studio          | 200B   | 20-20                      | 60   | 12-Pin              | 60                 | XLR   | 24             | W  | 2295.00   | As above.  |
|              | C-41ULS         | Multiple  | Condenser           | Zinc Alloy    | Studio          | 200B   | 20-20                      | 58   | XLR                 |                    |   | 11             | WF   | 995.00    | Transformerless version, Model C-414TL, \$1195.00. Modular system. |
|              | C-451E          | Card.   | Condenser           | Zinc Alloy    | Studio          | 200B   | 20-20                      | 60.5   | XLR                 |                    |   | 3 3/8          |  | 400.00    |  |
|              | C-451EB         | Card.   | Condenser           | Zinc Alloy    | Studio          | 200B   | 20-20                      | 60.5   | XLR                 |                    |   | 3 3/4          | F  | 495.00    | As above.  |
|              | C-460B/CK-61ULS | Card.   | Condenser           | Zinc Alloy    | Studio          | 500B   | 20-20                      | 62   | XLR                 |                    |   | 5 1/2          | F  | 550.00    | As above.  |
|              | C-460B/CK-62ULS | Omni  | Condenser           | Zinc Alloy    | Studio          | 500B   | 20-20                      | 62   | XLR                 |                    |   | 5 1/2          | F  | 550.00    | As above.  |
|              | C-460B/CK-63ULS | Hyper Card.   | Condenser           | Zinc Alloy    | Studio          | 500B   | 20-20                      | 62   | XLR                 |                    |   | 5 1/2          | F  | 550.00    | As above.  |
|              | C-460B/CK-64ULS | Card.   | Condenser           | Zinc Alloy    | Studio          | 500B   | 20-20                      | 62   | LEMD                | 10                 | XLR   | 5 1/2          | F  | 775.00    | As above.  |
|              | C-451EB/CK-9    | Super Card.   | Condenser           | Zinc Alloy    | Studio          | 200B   | 20-20                      | 59   | XLR                 |                    |   | 4              | F  | 1100.00   | Long shotgun.  |
|              | C-451EB Preamp  |   | Condenser           | Zinc Alloy    | Studio          | 200B   | 20-20                      |  | XLF                 |                    |   | 3              | F  | 335.00    | Modular preamp.  |
|              | C-460B Preamp   |   | Condenser           | Zinc Alloy    | Studio          | 500B   | 20-20                      |  | XLR                 |                    |   | 4 1/2          | F  | 420.00    | As above.  |
|              | CK-1            | Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 60   |                     |                    |   | 1              |  | 145.00    |  |
|              | CK-1X           | Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 62   | LEMD                | 10                 |   | 1 1/8          |  | 200.00    |  |
|              | CK-2X           | Omni  | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 62   | LEMD                | 10                 |   | 1 1/8          |  | 200.00    |  |
|              | CK-3            | Hyper Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 61   |                     |                    |   | 1              |  | 145.00    |  |
|              | CK-3X           | Hyper Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 61   | LEMD                | 10                 |   | 1 1/8          |  | 200.00    |  |
|              | CK-5            | Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 60   |                     |                    |   | 4              |  | 275.00    |  |
|              | CK-8            | Super Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 54   |                     |                    |   | 2 1/2          | W  | 260.00    | Short shotgun.   |
|              | CK-8X           | Super Card.   | Condenser           | Zinc Alloy    | ENG             |  | 30-18                      | 59   | LEMD                | 10                 | XLR   | 4 1/4          | W  | 365.00    | As above.  |
|              | CK-9            | Super Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 59   |                     |                    |   | 12             | W  | 320.00    | Long shotgun.  |
|              | CK-22           | Omni  | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 62   |                     |                    |   | 1 1/2          |  | 145.00    |  |
|              | CK-61ULS        | Card.   | Condenser           | Zinc Alloy    | Studio          |  | 20-20                      | 62   |                     |                    |   | 1              |  | 170.00    |  |

(Continued)





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# MICROPHONES

| MANUFACTURER       | Model       | Directional Pattern Plus Channels:<br>Stereo = X2, Quad = X4, M-S = M-S | Operating Principle | Case Material | Most Common Use   | Actual Impedance<br>Balanced $\Omega$ | Operating Range, 1 kHz, Ohms | Open-Circuit Sensitivity<br>1 kHz, - dB re 1 Volt/1 bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment | Weight, Ounces | Wind Screen = W, On-Off Switch = S,<br>Switched Low or Preamp Filter = F | Price, \$ | Notes  |
|--------------------|-------------|---|---------------------|---------------|-------------------|---------------------------------------|------------------------------|---|---------------------|--------------------|-----------------------------|----------------|--|-----------|--|
| AKG<br>(Continued) | CK-62ULS    | Omni  | Condenser           | Zinc Alloy    | Studio            | 20-20                                 | 62                           |   |                     | 1                  |                             |                |  | 170.00    |  |
|                    | CK-63ULS    | Hyper Card.   | Condenser           | Zinc Alloy    | Studio            | 20-20                                 | 62                           |   |                     | 5 1/2              | F                           |                |  | 170.00    |  |
|                    | C-410       | Card.   | Electret Condenser  | Plastic       | Vocal             | 300                                   | 20-20                        | 70.5  | XLR                 | 11 3/4             |                             | 4 3/8          |  | 215.00    |  |
|                    | C-522       | Card. x2  | Electret Condenser  | Zinc Alloy    | Stereo            | 300B                                  | 20-20                        | 60  | 5-Pin XLR           | 6                  | 3-Pin XLR                   | 10             | W  | 995.00    | X-Y stereo.  |
|                    | C-535EB     | Card.   | Electret Condenser  | Zinc Alloy    | Vocal             | 200B                                  | 20-20                        | 61  | XLR                 |                    |                             | 10             | F  | 350.00    |  |
|                    | C-562       | Hemi.   | Electret Condenser  | Zinc Alloy    | General           | 600B                                  | 20-20                        | 54  | XLR                 | 10                 |                             | 33 3/8         | W  | 435.00    |  |
|                    | C-567E      | Omni  | Electret Condenser  | Zinc Alloy    | Voice             | 200                                   | 20-20                        | 64  | XLR                 | 9                  |                             | 3 1/2          | W  | 275.00    |  |
|                    | CK-67/3     | Omni  | Electret Condenser  | Zinc Alloy    | Voice             |                                       | 55                           |   |                     |                    |                             | 3 3/8          |  | 155.00    | Lavalier.  |
|                    | C-568EB     | Super Card.   | Electret Condenser  | Zinc Alloy    | ENG               | 200B                                  | 20-20                        | 62  | XLR                 |                    | 6                           | WF             |  | 350.00    | Short shotgun.   |
|                    | D-12E       | Card.   | Dynamic             | Zinc Alloy    | Bass Drum         | 280B                                  | 30-15                        | 73  | XLR                 |                    | 17                          |                |  | 390.00    |  |
|                    | C-535WL     | Card.   | Electret Condenser  | Brass         | Vocal             |                                       | 40-20                        | 63  |                     |                    |                             | 13 3/8         |  | 295.00    | Wireless.  |
|                    | CK-67WL     | Omni  | Electret Condenser  | Zinc Alloy    |                   |                                       | 40-20                        | 64  |                     |                    |                             |                |  | 190.00    | As above; lavalier; with tie-lac and tie-bar.                          |
|                    | D-321WL     | Hyper Card.   | Dynamic             | Zinc Alloy    | Vocal             |                                       | 40-20                        | 77  |                     |                    |                             | 13 3/8         |  | 195.00    | Wireless.  |
|                    | D-330WL     | Hyper Card.   | Dynamic             | Zinc Alloy    | Vocal             |                                       | 50-20                        | 77  |                     |                    |                             | 13 3/8         |  | 195.00    | As above.  |
|                    | A-85 Module |   |                     |               |                   |                                       |                              |   |                     |                    |                             |                |  | 80.00     | Allows use of any dynamic mike.  |
|                    | D-95S       | Hyper Card.   | Dynamic             |               | General           | 300B                                  | 70-18                        | †   | XLR                 |                    |                             | S              |  | 160.00    | †1.3 mV/Pa.  |
|                    | D-90S       | Card.   | Dynamic             |               | General           | 300B                                  | 70-18                        | †   | XLR                 |                    |                             | S              |  | 150.00    | †As above.   |
|                    | Q-580       | Super Card.   | Electret Condenser  |               | P.A.              | 1k, B                                 | 100-15                       | †   |                     | 3 1/8              |                             | 3 1/2          |  | 90.00     | †3.8 mV/Pa. 15 3/8-inch gooseneck.                                     |
|                    | CK-62DF     | Omni  | Condenser           | Zinc Alloy    |                   |                                       |                              |   |                     |                    |                             |                |  | 170.00    |  |
|                    | C-410P/B9   | Card.   | Electret Condenser  | Plastic       | Vocal             | 300                                   | 20-20                        | 70.5  | Mini                |                    |                             | 4 3/8          |  | 260.00    |  |
|                    | C-401B      | Figure 8  | Condenser           | Plastic       | Strings           | 200B                                  | 10-10                        | †   | Mini                |                    |                             |                |  | 85.00     | Two inputs, one output.  |
|                    | C-402B      | Card.   | Condenser           | Plastic       | Strings           | 200B                                  | 2.5k-20k                     | †   | Mini                |                    |                             |                |  | 85.00     | †13 mV/Pa. As above.   |
|                    | C-408B      | Hyper Card.   | Condenser           | Plastic       | Perc.             | 200B                                  | 80-20                        | †   | Mini                |                    |                             |                |  | 165.00    | †5 mV/Pa. As above.  |
|                    | C-409B      | Hyper Card.   | Electret Condenser  | Plastic       | Wind Instr.       | 200B                                  | 20-20                        | †   | Mini                |                    |                             |                |  | 165.00    | †10 mV/Pa. As above.   |
|                    | C-747       | Hyper Card.   | Condenser           | Metal         | Instr.            | 400B                                  | 30-18                        | †   | XLR                 |                    |                             |                |  | 400.00    | †10 mV/Pa.   |
|                    | C-1000S     | Card.   | Condenser           | Metal         | Vocal             | 200B                                  | 50-20                        | †   | XLR                 |                    |                             | S              |  | 325.00    | †6 mV/Pa. Includes adaptor for hyper cardioid.                         |
|                    | C-408       | Hyper Card.   | Condenser           | Plastic       | Perc. Wind Instr. | 200B                                  | 80-20                        | †   | XLR                 |                    |                             |                |  | 220.00    | †5 mV/Pa.  |
|                    | C-409       | Hyper Card.   | Condenser           | Plastic       | Perc. Wind Instr. | 200B                                  | 20-20                        | †   | XLR                 |                    |                             |                |  | 220.00    | †10 mV/Pa.   |
| AMBICO             | V-0620      | Uni-Card.   | Electret Condenser  | Alum.         | Video             | 600                                   | †                            | 40  | None                | 3                  | Mini                        | 10             | WS   | 99.95     | Switchable shotgun. †Uni, 100 Hz to 15 kHz; cardioid, 20 Hz to 18 kHz. |
|                    | V-0623      | Card.   | Electret Condenser  | Alum.         | Video             | 75                                    | 300-15                       | 94  | None                | 0                  | Mini/Phone                  | 16             | SF   | 99.95     | Wireless; hand-held.   |
|                    | V-0625      | Card.   | Electret Condenser  | Plastic       | Video             | 75                                    | 300-15                       | 40  | Mini                | 0                  | Mini/Phone                  | 6              | S  | 89.95     | Wireless; lavalier; three frequencies.                                 |
| AUDIO-TECHNICA     | AT4031      | Card.   | Condenser           | Brass         | Studio            | 100B                                  | 30-20                        |   | XLR-M               |                    |                             | 4.8            | F  | 325.00    |  |
|                    | AT4049      | Omni  | Condenser           | Brass         | Studio            | 250B                                  | 20-20                        |   | XLR-M               |                    |                             | 4.4            | F  | 580.00    | Interchangeable elements.  |
|                    | AT4051      | Card.   | Condenser           | Brass         | Studio            | 250B                                  | 20-20                        |   | XLR-M               |                    |                             | 4.2            | F  | 580.00    | As above.  |
|                    | AT4053      | Hyper Card.   | Condenser           | Alum.         | Brdst.            | 250B                                  | 30-20                        |   | XLR-M               |                    |                             | 4.2            | F  | 610.00    | As above.  |
|                    | AT4071      | Line  | Condenser           | Alum.         | Brdst.            | 250B                                  | 30-20                        |   | XLR-M               |                    |                             | 5.8            | WF   | 950.00    |  |
|                    | AT4073      | Line  | Condenser           | Alum.         | Brdst.            | 250B                                  | 30-20                        |   | XLR-M               |                    |                             | 4.2            | WF   | 790.00    |  |
|                    | AT837QML    | Card.   | Condenser           | ABS           | Podium            | 200B                                  | 40-18                        |   | XLR-M               |                    |                             |                | WF   | 152.00    |  |
|                    | AT853       | Card.   | Condenser           | ABS           | Choir/Stage       | 400B                                  | 30-20                        |   | Swcft. TA3F         | 25                 | XLR-M                       | 2              | WSF  | 237.00    |  |
|                    | AT855       | Card.   | Condenser           | Brass         | Podium            | 400B                                  | 30-20                        |   | Swcft. TA3F         | 10                 | XLR-M                       |                | WSF  | 237.00    |  |
|                    | AT857       | Card.   | Condenser           | ABS           | Podium            | 400B                                  | 30-20                        |   | Swcft. TA3F         | 10                 | XLR-M                       | 4              | WSF  | 285.00    |  |
|                    | AT859a      | Card.   | Condenser           | ABS           | Voice             | 400B                                  | 40-18                        |   | XLR-M               |                    |                             |                | WS   | 225.00    |  |
|                    | AT871       | Uni   | Condenser           | Brass         | Reinf.            | 400B                                  | 30-20                        |   | Swcft. TA3F         | 25                 | XLR-M                       | 14.8           | SF   | 295.00    | Boundary mike.   |
|                    | RD303       | (3)Card.  | Condenser           | Brass         | Podium            | 100B                                  | 30-20                        |   | (3)Swcft. TA3F      | (3)25              | XLR-M                       | 13.8           | WSF  | 1000.00   | Three elements in one housing.   |
|                    | AT801       | Omni  | Condenser           | Alum.         | Record            | 600                                   | 40-18                        |   | XLR-M               | 16 1/2             | Phone/XLR-M                 |                | S  | 126.00    |  |
|                    | AT802       | Omni  | Dynamic             | Alum.         | Brdst.            | 600                                   | 50-15                        |   | XLR-M               | 16 1/2             | Phone/XLR-M                 | 5              | S  | 122.00    |  |
|                    | AT803a      | Omni  | Condenser           | Alum.         | Brdst.            | 400B                                  | 30-20                        |   | XLR-M               |                    |                             | 0.09           | S  | 139.00    | Lavalier.  |
|                    | AT805b      | Omni  | Condenser           | Alum.         | Aero-bics         | 600B                                  | 50-15                        |   |                     | 20                 | Phone                       |                | S  | 85.00     | As above.  |
|                    | AT811       | Card.   | Condenser           | Alum.         | Reinf.            | 600B                                  | 50-20                        |   | XLR-M               | 16 1/2             | Phone/XLR-M                 |                | S  | 139.00    |  |
|                    | AT812       | Card.   | Dynamic             | Alum.         | Reinf.            | 600B                                  | 50-15                        |   | XLR-M               | 16 1/2             | Phone/XLR-M                 |                | S  | 148.00    |  |
|                    | AT813       | Card.   | Condenser           | Alum.         | Studio            | 600B                                  | 40-20                        |   | XLR-M               | 16 1/2             | Phone/XLR-M                 |                | S  | 153.00    | Phantom powered also available.  |
| (Continued)        | AT814a      | Card.   | Dynamic             | Brass         | Vocal             | 250                                   | 50-16                        |   | XLR-M               | 16 1/2             | Phone/XLR-M                 | 10             |  | 173.00    |  |



# MICROPHONES

| MANUFACTURER                  | Model    | Directional Pattern Plus Channels:<br>Stereo = 2, Quad = 4, M-S = M-S | Operating Principle | Case Material | Most Common Use | Actual Impedance, 1 kHz, Ohms,<br>Balanced = B | Operating Range, Hz to kHz | Open-Circuit Sensitivity,<br>1 kHz, -dB, re. 1 Volt/1 $\mu$ bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment<br>End of Cable | Weight, Ounces | Wind Screen = W, No Wind Screen = S<br>Switched Low or High Impedance = L or H | Price, \$ | Notes  |
|-------------------------------|----------|---|---------------------|---------------|-----------------|--|----------------------------|---|---------------------|--------------------|---|----------------|--|-----------|--|
| AUDIO-TECHNICA<br>(Continued) | AT815a   | Line Gradient Card.   | Condenser           | Alum.         | Brdcst.         | 600B   | 40-20                      |   | XLR-M               | 16½                | Phone/<br>XLR-M                             | 9.2            | WF   | 285.00    | As above.  |
|                               | AT831a   | Card.   | Condenser           | Brass         | Reinf. Studio   | 400B   | 40-20                      |   | XLR-M               |                    |   | 0.1            | WS   | 165.00    | Requires phantom powering.   |
|                               | AT833R   | Card.   | Condenser           | Alum.         |                 | 150B   | 30-20                      |   | XLR-M               | 16½                | XLR-M                                       | 4.7            |  | 225.00    |  |
|                               | AT835    | Line Gradient Card.   | Condenser           | Alum.         | Brdcst.         | 600B   | 40-20                      |   | XLR-M               | 16½                | XLR-M                                       | 8              | WF   | 257.00    | Gooseneck.   |
|                               | AT836    | Card.   | Dynamic             | Brass         | Vocal           | 250B   | 50-17                      |   | XLR-M               | 16½                | Phone/<br>XLR-M                             | 8.5            |  | 162.00    |  |
|                               | AT838g   | Card.   | Dynamic             | Steel & Alum. | Podium          | 600B   | 100-10                     |   | XLR-M               |                    |   | 12.4           |  | 110.00    |  |
|                               | ATR20    | Card.   | Dynamic             | Plastic       | Vocal           | 500  | 80-12                      | 64  | Attached            | 10                 | Mini/<br>Phone                              | 4.7            | WS   | 25.95     | Subminiature lavalier.   |
|                               | ATR25    | Card. x2  | Condenser           | Plastic       | Video/Record    | 600  | 70-18                      | 60  | Mini                | 10                 | Mini/<br>Phone                              | 2.8            | S  | 64.95     |  |
|                               | ATR30    | Card. Omni  | Dynamic             | Metal         | Vocal           | 500  | 60-15                      | 58  | XLR                 | 20                 | Phone                                       | 8              | WS   | 53.95     |  |
| AUDIX                         | UD50     | Card.   | Dynamic             | Zinc Alloy    | Vocal           | 500B   | 80-15                      | 80  | XLR                 |                    |   | 9              | S  | 89.00     | With switch, Model UD360. Optional probe cap for recording instruments.  |
|                               | UD300    | Card.   | Dynamic             | Zinc Alloy    | Vocal           | 200B   | 50-18                      | 76.5  | XLR                 |                    |   | 10             |  | 165.00    |  |
|                               | OM-1     | Hyper Card.   | Dynamic             | Alloy Brass   | Vocal/Instr.    | 200B   | 50-18                      | 78.5  | XLR                 |                    |   | 10½            |  | 239.00    |  |
|                               | OM-2     | Hyper Card.   | Dynamic             | Zinc Alloy    | Vocal           | 200B   | 40-20                      | 78.5  | XLR                 |                    |   | 9½             |  | 215.00    | Lavalier.  |
|                               | ML-10    | Omni  | Electret Condenser  | Alum.         | Vocal           | 1k, B  | 30-15                      | 68  | XLR                 | 10                 | Mini XLR                                    | 1              | WS   | 95.00     |  |
|                               | LEM-1    | Omni  | Electret Condenser  | Alum.         | Vocal           | 2.2k   | 80-12                      | 66  | Attached            | 10                 |   | 3              | W  | 49.00     | Lavalier.  |
|                               | UEM-81C  | Card.   | Electret Condenser  | Alum.         | Vocal/Instr.    | 600B   | 50-18                      | 62  | XLR                 | 20                 | XLR   | 4½             | WSF  | 119.00    | A/V shotgun.   |
|                               | UEM-81S  | Super Card.   | Electret Condenser  | Alum.         | Vocal           | 600B   | 30-20                      | 65  | XLR                 | 20                 | XLR   | 8½             | WSF  | 325.00    |  |
|                               | C-1      | Card.   | Electret Condenser  | Alum.         | Vocal/Instr.    | 1k, B  | 40-20                      | 65  | XLR                 |                    |   | 4½             | WS   | 189.00    | Battery or phantom powered. For A/V.                                     |
|                               | UEM-83R  | Super Card.   | Electret Condenser  | Alum.         | Vocal/Instr.    | 600  | 50-16                      | 64  | Attached            | 1                  | Mini/<br>Phone                              | 8              | W  | 119.00    |  |
|                               | UEM-311  | Card. x2  | Electret Condenser  | Alum.         | Vocal/Instr.    | 1k   | 40-20                      | 64  | Attached            | 20                 | Phone                                       | 9              | WS   | 119.00    | One-point stereo.  |
|                               | UEM-312  | Card. x2  | Electret Condenser  | Plastic       | Vocal/Instr.    | 1k   | 40-20                      | 64  | Attached            | 20                 | Phone                                       | 6              | WS   | 55.00     | As above.  |
|                               | ST-1     | Card. x2  | Electret Condenser  | Alum.         | Vocal/Instr.    | 1.7k   | 80-20                      | 64  | Attached            | 2                  | Stereo Mini                                 | 4              | W  | 129.00    | For Walkman or camera.   |
|                               | UEM-85   | Super Card.   | Electret Condenser  | Alum.         | Video           | 2k   | 50-15                      | 58  | Attached            | 1                  | Mini  | 3              | W  | 65.00     | †For bird watching.  |
|                               | UEM-87   | Super Card.   | Electret Condenser  | Alum.         | Video           | 2k   | 50-15                      | 62  | Attached            | 1                  | Mini  | 3              | W  | 65.00     |  |
|                               | UEM-88   | Super Card.   | Electret Condenser  | Plastic       | †               | 2k   | 200-15                     | 64  | Attached            |                    |   | 4              | WS   | 89.00     |  |
| AZDEN                         | DX-580   |   | Dynamic             | Alum.         | Music/Vocal     | 600  | 50-15                      | 76  | XLR                 | 20                 | Phone                                       |                | WS   | 69.95     | †Mini with phone adaptor.  |
|                               | DX-750   |   | Dynamic             | Plastic       | Vocal           | 600  | 70-12                      | 76  |                     | 15                 | Phone                                       | 4              | WS   | 39.95     |  |
|                               | DX-431   |   | Dynamic             | Plastic       | Vocal           | 600  | 100-12                     | 76  |                     | 15                 | Phone                                       | 4              | WS   | 29.95     |  |
| BEYERDYNAMIC                  | M58      | Omni  | Dynamic             | Alum.         | ENG/EFP         | 200B   | 40-20                      | 149   | A3M                 |                    |   | 9              | W  | 199.00    | 4.5-V battery or 12 to 48-V phantom powered. 12 to 48-V phantom powered. |
|                               | M300     | Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 50-15                      | 150   | A3M                 |                    |   | 8.6            | S  | 179.00    |  |
|                               | M300S    | Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 50-15                      | 150   | A3M                 |                    |   | 8.6            |  | 199.00    |  |
|                               | M300 TG  | Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 50-15                      | 150   | A3M                 |                    |   | 8.6            |  | 189.00    |  |
|                               | M300S TG | Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 50-15                      | 150   | A3M                 |                    |   | 8.6            |  | 209.00    |  |
|                               | M400     | Super Card.   | Dynamic             | Alum.         | Vocal           | 200B   | 40-16                      | 146   | A3M                 |                    |   | 9              |  | 229.00    |  |
|                               | M400S    | Super Card.   | Dynamic             | Alum.         | Vocal           | 200B   | 40-16                      | 146   | A3M                 |                    |   | 9              | S  | 249.00    |  |
|                               | M500     | Hyper Card.   | Ribbon              | Alum.         | Vocal           | 200B   | 40-18                      | 150   | A3M                 |                    |   | 8.5            |  | 319.00    |  |
|                               | M500S    | Hyper Card.   | Ribbon              | Alum.         | Vocal           | 200B   | 40-18                      | 150   | A3M                 |                    |   | 8.5            | S  | 339.00    |  |
|                               | M500 TG  | Hyper Card.   | Ribbon              | Alum.         | Vocal           | 200B   | 40-18                      | 150   | A3M                 |                    |   | 8.5            |  | 329.00    |  |
|                               | M500S TG | Hyper Card.   | Ribbon              | Alum.         | Vocal           | 200B   | 40-18                      | 150   | A3M                 |                    |   | 8.5            |  | 349.00    |  |
|                               | M600     | Hyper Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 40-16                      | 149   | A3M                 |                    |   | 8.2            | SF   | 339.00    |  |
|                               | M600S    | Hyper Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 40-16                      | 149   | A3M                 |                    |   | 8.2            |  | 359.00    |  |
|                               | M700     | Hyper Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 40-16                      | 149   | A3M                 |                    |   | 9.2            |  | 289.00    |  |
|                               | M700S    | Hyper Card.   | Dynamic             | Alum.         | Vocal           | 250B   | 40-16                      | 149   | A3M                 |                    |   | 9.2            | S  | 309.00    |  |
|                               | MCE80    | Super Card.   | Electret Condenser  | Brass         | Vocal           | 190B   | 50-18                      |   | A3M                 |                    |   | 8              | S  | 399.00    |  |
|                               | MCE81    | Card.   | Condenser           | Brass         | Vocal           | 190B   | 50-18                      |   | A3M                 |                    |   | 9.2            |  | 299.00    |  |
|                               | M69      | Hyper Card.   | Dynamic             | Brass         | Instr.          | 200B   | 50-16                      | 145   | A3M                 |                    |   | 11.3           |  | 209.00    |  |
|                               | M69 TG   | Hyper Card.   | Dynamic             | Brass         | Instr.          | 200B   | 50-16                      | 145   | A3M                 |                    |   | 11.3           |  | 219.00    |  |
|                               | M88 TG   | Hyper Card.   | Dynamic             | Brass         | Instr.          | 200B   | 30-20                      | 145   | A3M                 |                    |   | 11.3           |  | 399.00    |  |
|                               | M88      | Hyper Card.   | Dynamic             | Brass         | Instr.          | 200B   | 30-20                      | 145   | A3M                 |                    |   | 11.3           |  | 389.00    |  |
|                               | M101     | Omni  | Dynamic             | Brass         | Instr.          | 200B   | 40-20                      | 149   | A3M                 |                    |   | 5.6            | W  | 230.00    |  |
|                               | M130     | Figure 8  | Dual Ribbon         | Brass         | Instr.          | 200B   | 40-18                      | 152   | A3M                 |                    |   | 5.3            |  | 519.00    |  |
|                               | M160     | Hyper Card.   | Dual Ribbon         | Brass         | Instr.          | 200B   | 40-18                      | 152   | A3M                 |                    |   | 5.5            |  | 499.00    |  |
|                               | M201     | Hyper Card.   | Dynamic             | Brass         | Instr.          | 200B   | 40-18                      | 150   | A3M                 |                    |   | 7.8            |  | 269.00    |  |
|                               | M260     | Hyper Card.   | Ribbon              | Brass         | Instr.          | 200B   | 50-18                      | 150   | A3M                 |                    |   | 10.6           | S  | 299.00    |  |
|                               | M260S    | Hyper Card.   | Ribbon              | Brass         | Instr.          | 200B   | 50-18                      | 150   | A3M                 |                    |   | 10.6           |  | 319.00    |  |
|                               | M380 TG  | Figure 8  | Dynamic             | Zinc          | Instr.          | 600B   | 15-20                      |   | A3M                 |                    |   | 13             |  | 279.00    |  |
|                               | M420     | Hyper Card.   | Dynamic             | Brass         | Instr.          | 200B   | 100-12                     | 150   | A3M                 |                    |   | 5.2            |  | 199.00    |  |
|                               | M420     | Super Card.   | Dynamic             | Alum.         | Instr.          | 200B   | 100-12                     | 152   | A3M                 |                    |   | 2.5            |  | 139.00    |  |
|                               | M250N.80 | Hyper Card.   | Ribbon              | Brass         | P.A.            | 200B   | 100-18                     | 150   | A3M                 |                    |   | 8              |  | 250.00    |  |
|                               | M640N    | Card.   | Dynamic             | Zinc          | P.A.            | 200B   | 100-12                     | 152   | 3-Pin DIN           |                    |   | 4              |  | 115.00    |  |
|                               | M680S    | Card.   | Dynamic             | Zinc          | P.A.            | 200B   | 100-12                     | 152   |                     | 19                 | None  |                | S  | 200.00    | 19½-inch gooseneck.  |
| (Continued)                   |          |   |                     |               |                 |  |                            |   |                     |                    |   |                |  |           |  |

# THE NEXT PLATEAU



Kinergetics KCD-40

## You Can Hear The Beauty Of The Music Free From Hysteresis Distortion.

In *all* audio equipment, each transistor, wire and connector adds its own minute bit of distortion. The sum total of this is *hysteresis distortion*. It dulls the clarity and obscures the realism of the music.



**Only** Kinergetics' patented hysteresis canceling circuitry gives you the true quality of the music free from this distortion. We have invented a creative merger of art and technology in music reproduction.



***Our reputation is built on our obsession—to reproduce music with perfect realism.***

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### Our reputation...

"Kinergetics' KCD-20... 'the first CD player to crack the Class I Sound barrier'"

J. Peter Montcrieff

"International Audio Review", Hotline #43-45

CES Winter '87

"Their KCD-20A puts other CD players in the shade musically... it is a clear first-choice recommendation among CD players."

Neil Levenson

"Fanfare", Vol.10, No.4

CES — Summer '87

"Pure musicality is the only way I can adequately describe what I heard: no sensation of electronics or speakers, with believable sound staging and tonal accuracy... I think it would be safe to say that this represented the most 'music for dollar' at the show."

Lewis Lipnick

"Stereophile" Vol.10, No.5 Aug. 1987

CES — Winter '88

"The Death of Mid-Fi: The Big Chill in Vegas"

Michael Fremer

"The Absolute Sound" Vol.13, Issue 52, page 250

CES — Summer '88

We weren't there.

CES — Winter '89

"...I am pleased to note that the sound in the Kinergetics room was stunningly true to the sound of the original Steinway. Nice one, Ken and Tony!"

John Atkinson

"Stereophile" Vol.12, No.3, Mar. 1989

**Kinergetics Research — "constantly reaching for the final plateau — perfection."**

KCD-20 Compact Disc Player • KCD-40 Compact Disc Player • KBA-75 Class A Power Amplifier • KBA-202 Mono Power Amplifier • KBT-1 FM Tuner • KPC-1 Passive Control Center • BSC Compusound Systems: SW-200 Sub-Woofer Amplifier • SW-100 Sub-Woofer • SW-100.5 Sub-Woofer • Music Mate Speaker/Sub-Woofer Stands



**KINERGETICS  
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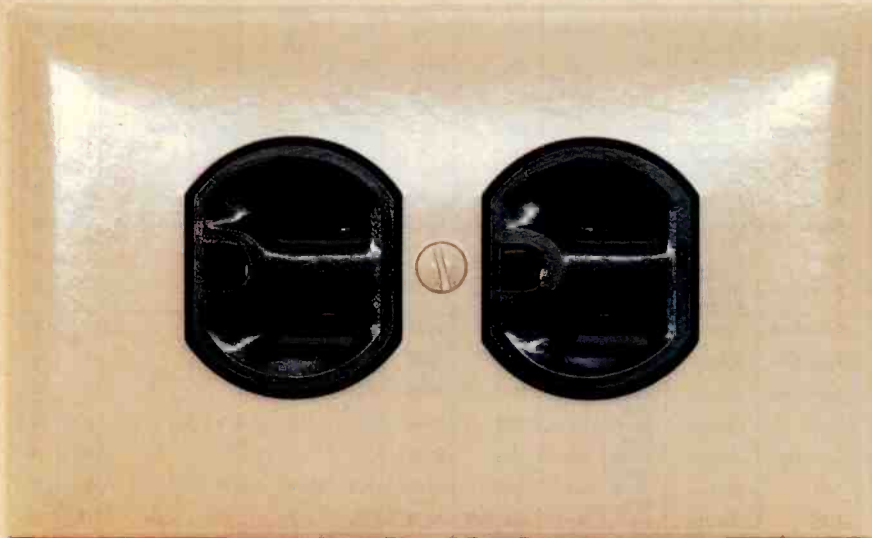
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# MICROPHONES

| MANUFACTURER                | Model    | Directional Pattern Plus Channels:<br>Stereo = x2, Quad = x4, M/S = M+S | Operating Principle | Case Material | Most Common Use | Actual Impedance, 1 kHz, Ohms:<br>Balanced = B | Operating Range, 1 kHz, Ohms:<br>Unbalanced = U | Open-Circuit Sensitivity<br>1 kHz, dB, re: 1 Volt/1 $\mu$ bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment | End of Cable | Weight, Ounces | Wind Screen = W or on Switch = S<br>Switched Low or Proximity Filter = L | Price, \$ | Notes                   |
|-----------------------------|----------|---|---------------------|---------------|-----------------|--|---|---|---------------------|--------------------|-----------------------------|--------------|----------------|--|-----------|-------------------------|
| BEYERDYNAMIC<br>(Continued) | M682     | Card.   | Dynamic             | Zinc          | P.A.            | 2008   | 100-12  | 152   |                     | 19                 | None                        |              |                |  | 195.00    | 11 3/4-inch gooseneck.  |
|                             | M682N(C) | Card.   | Dynamic             | Zinc          | P.A.            | 2008   | 100-12  | 152   |                     |                    |                             |              |                |  | 200.00    | As above.               |
|                             | CV710P48 |   |                     | Brass         | Studio          | 2008   | 40-20   |   | A3M                 |                    |                             |              | F              |  | 300.00    | Modular preamp for use  |
|                             | Preamp   |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | with "CK" models.       |
|                             | CV720PV  |   |                     | Brass         | Studio          | 2008   | 40-20   |   | A3M                 |                    |                             |              | F              |  | 350.00    | 8 to 52-V phantom       |
|                             | Preamp   |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | powered.                |
|                             | AC/CV750 |   |                     | Brass         | Studio          | 150B   | 40-20   |   | A3M                 |                    |                             | 6            | F              |  | 500.00    |                         |
|                             | Preamp   |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | CK701    | Omni  | Condenser           | Brass         | Studio          |  | 40-20   |   |                     |                    |                             |              | W              |  | 265.00    | Build-in suspension.    |
|                             | CK702    | Omni  | Condenser           | Brass         | Studio          |  | 40-20   |   |                     |                    |                             |              |                |  | 325.00    |                         |
|                             | CK703    | Card.   | Condenser           | Brass         | Studio          |  | 40-20   |   |                     |                    |                             |              | W              |  | 325.00    |                         |
|                             | CK704    | Card.   | Condenser           | Brass         | Studio          |  | 40-20   |   |                     |                    |                             |              |                |  | 345.00    |                         |
|                             | CK706    | Card./Lobe  | Condenser           | Brass         | Studio          |  | 40-20   |   |                     |                    |                             |              |                |  | 560.00    |                         |
|                             | CK707    | Lobe  | Condenser           | Brass         | Studio          |  | 40-20   |   |                     |                    |                             |              |                |  | 670.00    |                         |
|                             | CK708    | Figure 8  | Condenser           | Brass         | Studio          |  | 40-20   |   |                     |                    |                             |              |                |  | 625.00    |                         |
|                             | MC734P48 | Card.   | Condenser           | Alum.         | Vocal           |  | 20-18   | 138   | A3M                 |                    |                             | 9.5          | F              |  | 795.00    | 48-V phantom powered.   |
|                             | MC734PA  | Card.   | Condenser           | Alum.         | Vocal           | 150B   | 20-18   | 138   | A3M                 |                    |                             | 9.5          | F              |  | 825.00    | Higher SPL version of   |
|                             |          |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | model above.            |
|                             | MC736P48 | Card./Lobe  | Condenser           | Alum.         | Studio          | 150B   | 40-20   | 30  | A3M                 |                    |                             | 8.8          | F              |  | 925.00    |                         |
|                             | MC736PV  | Card./Lobe  | Condenser           | Alum.         | ENG/            | 150B   | 40-20   | 33  | A3M                 |                    |                             | 7            | F              |  | 900.00    |                         |
|                             |          |   |                     |               | EFP             |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MC737P48 | Lobe  | Condenser           | Alum.         | Studio          | 150B   | 40-20   | 30  | A3M                 |                    |                             | 15.6         | F              |  | 955.00    |                         |
|                             | MC737PV  | Lobe  | Condenser           | Alum.         | ENG/            | 150B   | 40-20   | 33  | A3M                 |                    |                             | 9            | F              |  | 975.00    |                         |
|                             |          |   |                     |               | EFP             |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MC740    | 5-Pattern   | Condenser           | Alum.         | Studio          | 150B   | 40-20   | 133   | A3M                 |                    |                             | 13.8         | F              |  | 1450.00   |                         |
|                             | MC740N   | 5-Pattern   | Condenser           | Alum.         | Studio          | 150B   | 40-20   | 133   | A5M                 |                    |                             | 13.8         | F              |  | 1550.00   |                         |
|                             | (C/5)    |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE5     | Omni  | Electret            | Brass         | Brdcst.         | 800B   | 20-20   | 141   |                     | 4                  | 6-Pin DIN                   | 0.25         | W              |  | 199.00    | Lavalier.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE5-3M  | Omni  | Electret            | Brass         | Brdcst.         | 800B   | 20-20   | 141   |                     | 10                 | 6-Pin DIN                   | 0.25         | W              |  | 209.00    | As above.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE5.1   | Omni  | Electret            | Brass         | Brdcst.         | 200B   | 20-20   | 129   |                     | 10                 | Phone                       | 0.25         | WS             |  | 299.00    | As above.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE5.9   | Omni  | Electret            | Brass         | Brdcst.         |  | 20-20   | 129   |                     | 10                 | None                        | 0.25         | W              |  | 189.00    | As above; for wireless  |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | system.                 |
|                             | MCE5.11  | Omni  | Electret            | Brass         | Brdcst.         | 200B   | 20-20   | 129   |                     | 10                 | A3M                         | 0.25         | WS             |  | 399.00    |                         |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE6     | Omni  | Electret            | Brass         | Instr.          | 800B   | 20-20   | 111   |                     | 4                  | 6-Pin DIN                   | 0.25         | W              |  | 199.00    | Lavalier.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE6.1   | Omni  | Electret            | Brass         | Instr.          | 200B   | 20-20   | 99  |                     | 10                 | Phone                       | 0.25         | WS             |  | 299.00    | As above.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE6.9   | Omni  | Electret            | Brass         | Instr.          |  | 20-20   | 99  |                     | 10                 | None                        | 0.25         | W              |  | 189.00    | As above; for wireless  |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | system.                 |
|                             | MCE6.11  | Omni  | Electret            | Brass         | Instr.          | 200B   | 20-10   | 99  |                     | 10                 | A3M                         | 0.25         | WS             |  | 399.00    | Lavalier; battery or    |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | phantom powered.        |
|                             | MCE10    | Hyper Card.   | Electret            | Brass         | Brdcst.         | 700B   | 40-20   | 42  |                     | 4                  | 6-Pin DIN                   | 0.5          | W              |  | 299.00    | Lavalier; for mike line |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | level.                  |
|                             | MCE10.1  | Hyper Card.   | Electret            | Brass         | Brdcst.         | 200B   | 40-20   | 42  |                     | 10                 | Phone                       | 0.5          | WS             |  | 399.00    | Lavalier.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | MCE10.9  | Hyper Card.   | Electret            | Brass         | Brdcst.         |  | 40-20   | 42  |                     | 10                 | None                        | 0.5          | W              |  | 259.00    | As above; for wireless  |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | system.                 |
|                             | MCE10.11 | Hyper Card.   | Electret            | Brass         | Brdcst.         | 200B   | 40-20   | 42  |                     | 10                 | A3M                         | 0.5          | WS             |  | 399.00    | Lavalier; battery or    |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | phantom powered.        |
|                             | MPC40    | Hemi.   | Condenser           | Brass         | Reinf.          | 1k   | 25-20   |   |                     | 10                 | 3-Pin                       | 3            | S              |  | 295.00    |                         |
|                             | MPS40.01 | Hemi.   | Condenser           | Brass         | Reinf.          | 180B   | 25-20   |   |                     | 10                 | 3-Pin                       | 3            | S              |  | 539.00    | Includes MES40 power    |
|                             |          |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | supply.                 |
|                             | MPS40.02 | Hemi.   | Condenser           | Brass         | Reinf.          | 150B   | 25-20   |   | A3M                 | 10                 | 3-Pin                       | 3            | F              |  | 795.00    | Includes CV750 preamp.  |
|                             | MPC50    | Hemi.   | Condenser           | Oak           | Reinf.          | 200B   | 20-20   |   |                     |                    |                             | 18           | S              |  | 695.00    | Battery or phantom      |
|                             |          |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | powered.                |
|                             | MPC60/1  | Hemi.   | Condenser           | Oak           | Reinf.          | 200B   | 20-20   |   | A3M                 |                    |                             | 26           | S              |  | 895.00    | As above.               |
|                             | MPC60/3  | Half Card.  | Condenser           | Oak           | Reinf.          | 200B   | 20-20   |   | A3M                 |                    |                             | 25           | S              |  | 995.00    |                         |
| BRÜEL & KJÆR                | 4003     | Omni  | Condenser           | Brass         | Piano/          |  | 10-20   | †   | 4-Pin XLR           | 15                 |                             | 5.3          | W              |  | 1226.00   | †50 mV/Pa. Requires     |
|                             |          |   |                     |               | Orch.           |  |   |   |                     |                    |                             |              |                |  |           | Model 2812 power        |
|                             | 4004     | Omni  | Condenser           | Brass         | Perc.           |  | 10-40   | †   | 4-Pin XLR           | 15                 |                             | 5.3          | W              |  | 1226.00   | supply (two-channel,    |
|                             |          |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | 130 V), \$1275.00.      |
|                             | 4006     | Omni  | Condenser           | Brass         | Piano/          |  | 20-20   | †   | XLR                 | 15                 |                             | 5.3          | W              |  | 1226.00   | †10 mV/Pa. Power        |
|                             |          |   |                     |               | Orch./          |  |   |   |                     |                    |                             |              |                |  |           | supply as above.        |
|                             |          |   |                     |               | Vocal           |  |   |   |                     |                    |                             |              |                |  |           | †12.5 mV/Pa. 48-V       |
| CROWN<br>INTERNATIONAL      | 4007     | Omni  | Condenser           | Brass         | †               |  | 20-40   | ††  | XLR                 | 15                 |                             | 5.3          | W              |  | 1226.00   | phantom powered.        |
|                             |          |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | 4011     | Card.   | Condenser           | Brass         | Vocal/          |  | 40-20   | †   | XLR                 | 15                 |                             | 5.8          | W              |  | 1497.00   | †Sampling. ††2.5mV/Pa.  |
|                             |          |   |                     |               | Instr.          |  |   |   |                     |                    |                             |              |                |  |           | Powered as above.       |
|                             | 3529     | Omni x2   | Condenser           | Brass         | †               |  | 20-20   | ††  | 4-Pin XLR           | 15                 |                             |              | W              |  | 5378.00   | †10 mV/Pa. Powered as   |
|                             |          |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | above.                  |
|                             | 3530     | Omni x2   | Condenser           | Brass         | †               |  | 20-20   | ††  | XLR                 | 15                 |                             |              | W              |  | 4185.00   | †Piano/orch./sampling.  |
|                             |          |   |                     |               |                 |  |   |   |                     |                    |                             |              |                |  |           | ††50 mV/Pa. Requires    |
| (Continued)                 | PZM-6FS  | Hemi.   | Electret            | Alum.         | Record          | 240  | 20-15   | 67  |                     | 15                 | XLR                         | 5            | W              |  | 349.00    | Model 2812 supply.      |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | †As above. ††12.5 mV/   |
|                             | PZM-6R   | Hemi.   | Electret            | Alum.         | Record          | 240  | 20-15   | 65  |                     | 15                 | XLR                         | 5            | W              |  | 349.00    | Pa. 48-V phantom        |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | powered.                |
|                             | PZM-30FS | Hemi.   | Electret            | Alum.         | Record          | 240  | 20-15   | 67  | XLR                 |                    |                             | 6 1/2        | W              |  | 349.00    |                         |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | PZM-30R  | Hemi.   | Electret            | Alum.         | Record          | 240  | 20-15   | 65  | XLR                 |                    |                             | 6 1/2        | W              |  | 349.00    | Pressure Zone Mike.     |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | As above.               |
|                             | PZM-20RG | Hemi.   | Electret            | Alum.         | Conf.           | 240  | 20-15   | 65  | Screw               |                    |                             | 8            | W              |  | 319.00    | As above.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | As above.               |
|                             | PZM-180  | Hemi.   | Electret            | Plastic       | Record          | 150  | 50-18   | 70  | XLR                 |                    |                             | 2            | W              |  | 189.00    | As above.               |
|                             |          |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           | As above.               |
|                             | Sound    | Hemi.   | Electret            | Plastic       | Conf.           | 1.6k   | 50-15   | 55  |                     | 8                  | Mini/                       | 2            | W              |  | 99.00     | As above.               |
|                             | Grabber  |   | Condenser           |               |                 |  |   |   |                     |                    |                             |              |                |  |           |                         |
|                             | CM-310   | Diff. Card.   | Electret            | Alum./        | Stage/          | 200  | 60-17   | 77  | XLR                 |                    |                             | 7            | W              |  | 259.00    | High gain before        |
|                             |          |   | Condenser           | Steel         | Vocal           |  |   |   |                     |                    |                             |              |                |  |           | feedback.               |

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# MICROPHONES

| MANUFACTURER                       | Model       | Directional Pattern Plus Channels:<br>Stereo = x2, Quad = x4, M-S = M-S | Operating Principle | Case Material | Most Common Use | Actual Impedance, 1 kHz, Ohms: | Operating Range, Hz to kHz: | Open-Circuit Sensitivity, 1 kHz, -dB, re: 1 volt/1 bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment | Weight, Ounces | Wind Screen = W, On/Off Switch = O, Switched Low or Preamp Filter = F | Price, \$ | Notes   |
|------------------------------------|-------------|---|---------------------|---------------|-----------------|--------------------------------|-----------------------------|--|---------------------|--------------------|-----------------------------|----------------|---|-----------|---|
| CROWN INTERNATIONAL<br>(Continued) | CM-200      | Card.   | Electret Condenser  | Alum./Steel   | Stage/Vocal     | 200                            | 80-15                       | 73   | XLR                 |                    |                             | 7              | W   | 259.00    |   |
|                                    | CM-100      | Omni  | Electret Condenser  | Alum./Steel   | Vocal/Stage     | 240                            | 20-20                       | 72   | XLR                 |                    |                             | 8              | W   | 189.00    | Pressure Zone Mike.   |
|                                    | PCC-160     | Half Super Card.  | Electret Condenser  | Steel         | Stage           | 150                            | 50-18                       | 53   | Swch. TA3M          | 15                 | XLR                         | 11½            | WF  | 275.00    | Boundary mike.  |
|                                    | PCC-200     | Half Super Card.  | Electret Condenser  | Steel         | Stage           | 150                            | 50-18                       | 53   | Swch. TA3M          | 15                 | XLR                         | 11½            | WF  | 329.00    | Gated boundary mike.  |
|                                    | GLM-200     | Hyper Card.   | Electret Condenser  | Steel         | P.A./Record     | 100                            | 60-20                       | 69   |                     | 8                  | XLR                         | 1              | W   | 229.00    | Miniature.  |
|                                    | GLM-100     | Omni  | Electret Condenser  | Steel         | P.A./Record     | 240                            | 20-20                       | 71.5   |                     | 8                  | XLR                         | 1              | W   | 199.00    | As above.   |
|                                    | GLM-200/EQ  | Hyper Card.   | Electret Condenser  | PVC           |                 | 400                            | 100-18                      | 75   |                     | 4                  | None                        | 1              | W   | 119.00    | Lavalier; for wireless transmitter.   |
|                                    | GLM-100/E   | Omni  | Electret Condenser  | PVC           |                 |                                |                             |  |                     |                    |                             |                |   | 98.00     | As above.   |
|                                    | GLM-100/ENG | Omni  | Electret Condenser  | PVC/Steel     | ENG             | 240                            | 80-20                       | 71.5   |                     | 5                  | XLR                         | 1              | W   | 239.00    | Lavalier.   |
|                                    | LM-200      | Super Card.   | Electret Condenser  | Steel         | †               | 100                            | 80-15                       | 68   |                     | 8                  | Screw                       | 10¼            | W   | 289.00    | †Lectern.   |
| ELECTRO-VOICE                      | SASS-P      | Uni x2  | Electret Condenser  | Plastic       | ENG             | 240                            | 20-18                       | 64   | XLR                 |                    |                             | 17             | WF  | 849.00    |   |
|                                    | SASS-B      | Uni x2  | Electret Condenser  | Plastic       | †               | 30                             | 20-18                       | 56.5   | XLR                 |                    |                             | 30             | W   | 799.00    | †Classical recording.   |
|                                    | N/D 757     | Super Card.   | Dynamic             | Steel & Alum. | Vocal           | 150B                           | 25-22                       | 50†  | A3M                 |                    |                             | 7.7            | WF  | 297.00    | †0 dB = 1 mW/Pa.  |
|                                    | N/D 457     | Hyper Card.   | Dynamic             | Steel & Alum. | Vocal           | 150B                           | 25-21                       | 50†  | A3M                 |                    |                             | 7.1            | W   | 222.00    |   |
|                                    | N/D 357     | Super Card.   | Dynamic             | Steel & Alum. | Vocal           | 150B                           | 25-20                       | 53†  | A3M                 |                    |                             | 7.1            | W   | 174.00    |   |
|                                    | N/D 257     | Card.   | Dynamic             | Steel & Alum. | Vocal           | 150B                           | 35-19                       | 53†  | A3M                 |                    |                             | 7.1            | W   | 126.00    |   |
|                                    | N/D 408     | Super Card.   | Dynamic             | Steel & Alum. | Instr.          | 150B                           | 30-22                       | 50†  | A3M                 |                    |                             | 6.7            | W   | 228.00    | Positionable yoke mount.  |
|                                    | N/D 308     | Card.   | Dynamic             | Steel & Alum. | Instr.          | 150B                           | 40-20                       | 53†  | A3M                 |                    |                             | 6.7            | W   | 186.00    | As above.   |
|                                    | RE20        | Card.   | Dynamic             | Steel         | Music/Vocal     | 50B/150B/250B                  | 40-18                       | 57†  | A3M                 | 15                 | None                        | 26             | WF  | 545.00    | Variable-D.   |
|                                    | RE18        | Super Card.   | Dynamic             | Steel         | Music/Vocal     | 150B                           | 80-15                       | 57†  | A3M                 | 15                 | None                        | 8              | W   | 308.00    | As above; integral shock mount.   |
|                                    | RE16        | Super Card.   | Dynamic             | Steel         | Vocal           | 150B                           | 80-15                       | 56†  | A3M                 | 15                 | None                        | 8              | W   | 296.00    | Variable-D.   |
|                                    | RE15        | Super Card.   | Dynamic             | Steel         | Vocal           | 150B                           | 80-15                       | 56†  | A3M                 | 15                 | None                        | 6              | W   | 286.00    | As above.   |
|                                    | RE11        | Super Card.   | Dynamic             | Steel         | Vocal           | 150B                           | 90-13                       | 56†  | A3M                 | 15                 | None                        | 6              | W   | 201.00    | As above.   |
|                                    | RE10        | Super Card.   | Dynamic             | Steel         | Vocal           | 150B                           | 90-13                       | 56†  | A3M                 | 15                 | None                        | 6              | W   | 189.00    | As above.   |
|                                    | RE98        | Omni  | Condenser           | Brass & Alum. | Music/Vocal     | 150B                           | 80-15                       | 45†  | A3M                 | 10                 | A3M                         | 11             | W   | 218.00    | †10.7 ounce for capsule only. Battery or phantom powered.   |
|                                    | RE50        | Omni  | Dynamic             | Alum.         | Vocal           | 150B                           | 80-13                       | 55†  | A3M                 | 15                 | None                        | 9.5            | W   | 165.00    | Integral shock mount.   |
|                                    | RE55        | Omni  | Dynamic             | Steel         | Music/Vocal     | 150B                           | 40-20                       | 57†  | A3M                 | 15                 | None                        | 8.5            | W   | 274.00    |   |
|                                    | RE45N/D     | Hyper Card.   | Dynamic             | Alum.         | ENG             | 600B                           | 150-15                      | 50†  | A3M                 |                    |                             | 7.5            | WF  | 375.00    | Short shotgun.  |
|                                    | OS35        | Card.   | Dynamic             | Steel         | Music/Vocal     | 150B                           | 60-17                       | 60†  | A3M                 | 15                 | None                        | 9.2            | W   | 176.00    | Integral shock mount.   |
|                                    | D054        | Omni  | Dynamic             | Steel         | Music/Vocal     | 150B                           | 50-18                       | 58†  | A3M                 | 15                 | None                        | 6.5            | W   | 164.00    |   |
|                                    | D056        | Omni  | Dynamic             | Steel & Alum. | Music/Vocal     | 150B                           | 80-18                       | 61†  | A3M                 | 15                 | None                        | 6.5            | W   | 137.00    | As above; with longer handle, Model D056L, \$156.00.  |
|                                    | C015P       | Omni  | Condenser           | Steel         | Music/Vocal     | 150B                           | 20-18                       | 49†  | A3M                 | 15                 | None                        | 7.5            | W   | 315.00    |   |
|                                    | C090        | Omni  | Condenser           | Brass & Alum. | Music/Vocal     | 150B                           | 40-15                       | 57†  | Threaded            | 6                  | None                        | 0.7            | W   | 159.00    | Lavalier; battery powered.  |
|                                    | PL80        | Super Card.   | Dynamic             | Zinc & Alum.  | Vocal           | 150B                           | 60-17                       | 56†  | A3M                 | 0                  | None                        | 12.3           | W   | 219.00    |   |
|                                    | PL20        | Card.   | Dynamic             | Steel         | Music/Vocal     | 50B/150B/1250B                 | 45-18                       | 57†  | A3M                 | 0                  | None                        | 26             | WF  | 584.00    | Variable-D.   |
|                                    | PL10        | Card.   | Dynamic             | Steel         | Music/Vocal     | 150B                           | 75-15                       | 56†  | A3F                 | 0                  | None                        | 11             | W   | 354.00    | As above.   |
|                                    | PL50N/D     | Card.   | Dynamic             | Zinc          | Vocal           | 150B                           | 80-18                       | 53†  | A3M                 |                    |                             | 9.7            | WS  | 156.00    |   |
|                                    | PL60N/D     | Super Card.   | Dynamic             | Zinc          | Vocal           | 150B                           | 70-18                       | 53†  | A3M                 |                    |                             | 9.7            | WS  | 210.00    |   |
|                                    | PL70N/D     | Hyper Card.   | Dynamic             | Zinc          | Vocal           | 150B                           | 60-18                       | 50†  | A3M                 |                    |                             | 9.7            | WS  | 252.00    |   |
|                                    | 8K-1        | Card.   | Condenser           | Zinc & Alum.  | Vocal           | 150B                           | 50-18                       | 50†  | A3M                 | 0                  | None                        | 12             | WS  | 199.00    | Battery or phantom powered.   |
| FOSTEX                             | M20RP       | M-S   | Ribbon              | Alum.         | Vocal/Instr.    | 250B                           | 40-18                       | 51   |                     | 6                  |                             | 24             |   | 695.00    |   |
|                                    | M11RP       | Uni   | Ribbon              | Alum.         | Vocal           | 250B                           | 40-18                       | 51   |                     |                    |                             | 20             |   | 595.00    |   |
|                                    | M88RP       | Bi  | Ribbon              | Alum.         | Vocal           | 250B                           | 40-18                       | 52   |                     |                    |                             | 20             | F   | 650.00    |   |
|                                    | M77RP       | Uni   | Ribbon              | Alum.         | Instr.          | 250B                           | 40-18                       | 56   |                     |                    |                             | 20             | F   | 460.00    |   |
| GC-THORSEN                         | 30-2374     | Card.   | Dynamic             | Alum.         | Vocal           | 500/50k                        | 80-15                       | †  |                     | 20                 | Phone                       | 8              | WSF   | 35.45     | †-72 dB at 500 ohms, -52 dB at 50 kilohms.  |
|                                    | 30-2382     | Card. x2  | Electret Condenser  | Alum.         | Vocal           | 600                            | 50-16                       | 68   | Attached            | 10                 | Phone                       | 8              | WSF   | 36.00     |   |
| HM ELECTRONICS                     | HM58 RM77   | Card.   | Dynamic Electret    |               | Pro Pro         |                                |                             |  | XLR XLR             |                    |                             |                |   | 164.00    | Built-in reverb.  |
|                                    | EM43-4      | Omni  | Electret Condenser  |               |                 |                                |                             |  |                     |                    |                             |                |   | 144.00    |   |
|                                    | System 55   |   | Electret Condenser  |               |                 | 1.4k, B                        | 20-20                       |  |                     | 8                  | TA4F                        |                | W   | 70.00     | Wireless; tie-clip.   |
|                                    |             |   |                     |               |                 |                                |                             |  |                     |                    |                             |                |   | 1100.00   | Diversity wireless system; HM58 element standard; choice of optional elements and hand-held transmitters. |
| (Continued)                        | System 515  |   |                     |               |                 |                                |                             |  |                     |                    |                             |                |   | 770.00    | Wireless, body-pack type; no mike.  |

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# MICROPHONES

| MANUFACTURER                  | Model  |   | Directional Pattern Plus Channels:<br>Stereo = 2, Quad = 4, M-S = M-S  | Operating Principle  | Case Material  | Most Common Use  | Actual Impedance:<br>Balanced = B                                    | Operating Range: 1 kHz, Ohms   | Open-Circuit Sensitivity:<br>1 kHz, dB, re: 1 Volt/1 $\mu$ bar                                       | Mike Connector Type  | Cable Length, Feet  | Connector Type on Equipment              | Weight, Ounces  | Wind Screen = W, On/Off Switch = S, F  | Price, \$   | Notes  |
|-------------------------------|--|---|--|--|--|--|--|--|--|--|---|--|---|--|---|--|
| HM ELECTRONICS<br>(Continued) | System 525<br>System 535   |   |  |  |  |  |  |  |  |  |   |  |   |  | 785.00<br>650.00  | Wireless, includes HM58 element.<br>Wireless, body-pack type; includes EM43-4 element.   |
| MARANTZ                       | EC-1<br>EC-1S<br>EC-3<br>EC-3S<br>EC-7<br>EC-9P  | Omni<br>Omni<br>Card.<br>Card.<br>Card.<br>Card.                              | Electret Condenser<br>Electret Condenser<br>Electret Condenser<br>Electret Condenser<br>Electret Condenser<br>Electret Condenser | Alum.<br>Alum.<br>Alum.<br>Alum.<br>Alum.<br>Alum.                         |  | 2k<br>2k<br>1.5k<br>1.5k<br>250B<br>250B                     | 60-13<br>60-13<br>50-15<br>50-15<br>40-16<br>30-17                   | 52 $\uparrow$<br>52 $\uparrow$<br>52 $\uparrow$<br>52 $\uparrow$<br>52 $\uparrow$<br>56 $\uparrow$           |  | Phone<br>Phone<br>Phone<br>Phone<br>Cannon XLR<br>Cannon XLR |   |  |   |  | 30.00<br>34.00<br>42.00<br>48.00<br>88.00<br>140.00   | $\uparrow$ 1 V/Pa. Includes desk stand.<br>As above; start/stop switch.<br>Start-stop switch.<br>Low-cut switch.<br>As above; 10-dB pad.   |
| MILAB                         | VIP-50<br>DC-96B<br>VM-41<br>LC-25<br>LC-28<br>MP-30<br>BM-75<br>D-37  | Multiple Card.<br>Card.<br>Card.<br>Card.<br>Card.<br>Card.<br>Card.<br>Card. | Condenser<br>Condenser<br>Condenser<br>Condenser<br>Condenser<br>Condenser<br>Condenser<br>Condenser                             | Alum. Brass<br>Brass<br>Brass<br>Brass<br>Brass<br>Brass<br>Brass<br>Brass | Vocal Vocal/<br>Instr. Instr.<br>Vocal Vocal/<br>Instr. Instr.<br>Vocal Vocal/<br>Instr. Instr.<br>Vocal Vocal/<br>Instr. Instr. | 180B<br>170B<br>170B<br>170B<br>170B<br>170B<br>200B<br>250B | 40-20<br>40-20<br>40-20<br>40-20<br>40-20<br>40-20<br>40-20<br>50-20 | $\uparrow$<br>$\uparrow$<br>$\uparrow$<br>$\uparrow$<br>$\uparrow$<br>$\uparrow$<br>$\uparrow$<br>$\uparrow$ | 3-Pin XLR<br>3-Pin XLR<br>3-Pin XLR<br>3-Pin XLR<br>3-Pin XLR<br>3-Pin XLR<br>3-Pin XLR<br>3-Pin XLR |  | 14.3<br>7.1<br>3.8<br>11.4<br>11.4<br>2.9<br>11.1<br>10.4 | WF<br>W<br>WF<br>W<br>WF<br>W<br>WF<br>W | 1395.00<br>695.00<br>475.00<br>575.00<br>675.00<br>350.00<br>375.00<br>275.00 | $\uparrow$ 14 mV/Pa.<br>$\uparrow$ 6 mV/Pa.<br>$\uparrow$ 10 mV/Pa.<br>$\uparrow$ 10 mV/Pa. Hand-held; line-level version with 400-ohm impedance; Model LC-25LL.<br>Hand-held.<br>$\uparrow$ 9 mV/Pa. Pressure Zone Mike.<br>$\uparrow$ 5 mV/Pa. Hand-held.<br>$\uparrow$ 1.3 mV/Pa. As above. |   |  |
| NADY                          | 1200 GT<br>1200 LT<br><br>1200 HT<br><br>650 GT<br>650 LT<br><br>650 HT<br>650 HT/58<br><br>650 HT/N/DYM<br><br>750 Receiver<br>201 GT<br>201 LT<br><br>201 HT<br>201 HT/58<br><br>201 HT/N/DYM<br><br>101 GT<br>101 LT<br><br>101 HT<br>101 HT/58<br><br>101 HT/N/DYM |   |  |  |  |  |  |  |  |  |   |  |   |  | 1599.95<br>1599.95<br><br>1699.95<br><br>599.95<br>639.95<br><br>659.95<br>859.95<br><br>889.95<br>849.95<br>349.95<br>389.95<br><br>409.95<br>609.95<br><br>639.95<br>249.95<br>279.95<br><br>299.95<br>509.95<br><br>534.95 | True diversity wireless system; up to 20 units.<br>As above but with lavalier transmitter with mini XLR connector; compatible with most lavaliers.<br><br>Same as 1200 GT but with Shure SM-58 mike/transmitter; choice of optional elements.<br>True diversity wireless system; up to 10 units.<br>As above but with lavalier transmitter; compatible with most lavaliers; also used with directional mikes for instruments.<br>Same as 650 GT but with Nady YD-08 hand-held mike/transmitter.<br>Same as 650 GT but with Shure SM-58 element on hand-held mike/transmitter.<br>Same as 650 GT but with Electro-Voice N/DYM on hand-held mike/transmitter.<br>Two separate receiving sections plus mixer.<br>True diversity wireless system; seven channels.<br>As above but with lavalier transmitter; compatible with most lavaliers.<br>Same as 201 GT but with Nady YD-08 hand-held mike/transmitter.<br>Same as 201 GT but with Shure SM-58 element on hand-held mike/transmitter.<br>Same as 201 GT but with Electro-Voice N/DYM element on hand-held mike/transmitter.<br>Seven channels.<br>As above but with lavalier transmitter; compatible with most lavaliers.<br>Same as 101 GT but with Nady YD-08 hand-held mike/transmitter.<br>Same as 101 GT but with Shure SM-58 element on hand-held mike/transmitter.<br>Same as 101 GT but with Electro-Voice N/DYM element on hand-held mike/transmitter. |
| (Continued)                   |  |   |  |  |  |  |  |  |  |  |   |  |   |  |   |  |

# MICROPHONES

| MANUFACTURER        | Model      | Directional Pattern Plus Channels:<br>Stereo = 2, Quad = 4, M-S = M-S | Operating Principle     | Case Material | Most Common Use    | Actual Impedance, 1 kHz, Ohms:<br>Balanced = B | Operating Range, Hz to kHz | Open Circuit Sensitivity,<br>1 kHz, -dB re. 1 Volt/1 $\mu$ bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment | Weight, Ounces | Wind Screen = W, On-Off Switch = S,<br>Switched Low or Proximity Filter = F | Price, \$ | Notes  |
|---------------------|------------|---|-------------------------|---------------|--------------------|--|----------------------------|--|---------------------|--------------------|-----------------------------|----------------|---|-----------|--|
| NADY<br>(Continued) | 49 Mini/GT |   |                         |               |                    |  |                            |  |                     |                    |                             |                |   | 119.95    | Compact wireless system; operates on two 49-MHz frequencies.                                       |
|                     | 49 Mini/LT |   |                         |               |                    |  |                            |  |                     |                    |                             |                |   | 159.95    | As above but with lavalier transmitter; Nady E-107 omni element.                                   |
|                     | 49 Mini/HT |   |                         |               |                    |  |                            |  |                     |                    |                             |                |   | 199.95    | Same as 49 Mini/GT but with Nady YD-08 hand-held mike/transmitter.                                 |
| NAKAMICHI           | CM-300S    | Card./Omni  | Electret Condenser      | Alum.         |                    | 200  | 30-18                      | 76   | XLR                 | 16 1/2             | Phone                       | 5.9            | WSF   | 250.00    | Both capsules supplied; shotgun capsule optional; three-mike matched set, Model CM-300T, \$650.00. |
|                     | CM-100     | Card.   | Electret Condenser      | Alum.         |                    | 200  | 30-18                      | 76   | XLR                 | 16 1/2             | Phone                       | 5.6            | WSF   | 150.00    | Omni and shotgun capsules optional.  |
|                     | DM-500     | Card.   | Dynamic                 | Alum.         | Vocal              | 250  | 50-15                      | 73   | XLR                 | 16 1/2             | Phone                       | 5.6            | W   | 150.00    |  |
| NEUMANN             | KM130      | Omni  | Condenser               | Brass         | General            | 50B  | 40-20                      | †  | A3M                 |                    | A3M                         | 3              | W   | 600.00    | †12 mV/Pa (1 Pa equals 94 dB SPL).   |
|                     | KM140      | Card.   | Condenser               | Brass         | General            | 50B  | 40-20                      | †  | A3M                 |                    | A3M                         | 3              | W   | 600.00    | †15 mV/Pa.   |
|                     | KM145      | Card.   | Condenser               | Brass         | General            | 50B  | 40-20                      | †  | A3M                 |                    | A3M                         | 3              | W   | 600.00    | †14 mV/Pa. Low-frequency roll-off.   |
|                     | KM150      | Hyper Card.   | Condenser               | Brass         | General            | 50B  | 40-20                      | †  | A3M                 |                    | A3M                         | 3              | W   | 725.00    | †10 mV/Pa.   |
|                     | RSM1915    | M-S   | Condenser               | Alum.         | Film/Brdcst.       | 50B x2   | 40-20                      | †  | A3M Spez.           | 16 1/2             | (2)A3M                      | 6              | WF  | 2650.00   | †23 mV/Pa. Stereo shotgun; mono compatible.  |
|                     | KMS84      | Card.   | Condenser               | Brass         | Vocal/Perf. Studio | 150B   | 40-18                      | †  | A3M                 | 25                 | A3M                         | 7 1/2          | WF  | 1140.00   | †5 mV/Pa.  |
|                     | U87A       | Omni/Card./Figure 8   | Condenser               | Brass         | Studio             | 200B   | 40-16                      | †  | A3M                 | 25                 | A3M                         | 17 1/2         | WF  | 1875.00   | †20 mV/Pa.   |
|                     | U89        | 5-Pattern   | Condenser               | Brass         | Studio             | 150B   | 40-18                      | †  | A3M                 | 25                 | A3M                         | 14             | WF  | 1700.00   | †8 mV/Pa.  |
|                     | TLM170     | 5-Pattern   | Condenser               | Brass         | Studio             | 100B   | 40-18                      | †  | A3M                 | 25                 | A3M                         | 22             | WF  | 1750.00   | †8 mV/Pa.  |
|                     | KU81       | Binaural  | Condenser               | Rubber        |                    | 150B   | 40-16                      | †  | A3M                 | 25                 | A3M                         | 95             |   | 3990.00   | †10 mV/Pa. "Dummy" head included.  |
|                     | KMF4       | Card.   | Condenser               | Brass         |                    | 150B   | 40-20                      | †  | A3M                 | 25                 | A3M                         | 3/4            | W   | 925.00    | †12 mV/Pa.   |
|                     | KMR81      | Lobe  | Condenser               | Brass         | Film/Brdcst.       | 150B   | 40-18                      | †  | A3M                 | 25                 | A3M                         | 5              | WF  | 975.00    | †18 mV/Pa. Short shotgun.  |
|                     | KMR82      | Lobe  | Condenser               | Brass         | Film/Brdcst.       | 150B   | 40-20                      | †  | A3M                 | 25                 | A3M                         | 8 3/4          | WF  | 1080.00   | †21 mV/Pa. Shotgun.  |
|                     | RSM190     | M-S   | Condenser               | Brass         | Film/Brdcst.       | 50B  | 40-18                      | †  | Spez.               | 16 1/2             | A3M                         | 10 1/2         | W   | 2445.00   | †23 mV/Pa. Stereo shotgun; mono compatible.  |
| PASO SOUND          | SM69let    | M-S/X-Y   | Condenser               | Brass         | Concert Hall       | 200B   | 40-16                      | †  | Spez.               | 33                 | A3M                         | 16 1/2         |   | 3840.00   | †19 mV/Pa.   |
|                     | USM69      | M-S/X-Y   | Condenser               | Brass         | Studio             | 150B   | 40-16                      | †  | ASM                 | 25                 | A3M                         | 18             |   | 3490.00   | †10 mV/Pa.   |
|                     |            |   |                         |               |                    |  |                            |  |                     |                    |                             |                |   |           |  |
| PIONEER             | M501       | Card.   | Dynamic                 | Die-Cast Zinc | Vocal              | 250B   | 50-15                      |  | A3F                 | 15                 | A3F or A3M                  | 32             | WS  | 90.00     | Includes holder.   |
|                     | M601       | Card.   | Dynamic                 | Die-Cast Zinc | Vocal              | 250B   | 50-15                      |  | A3F                 | 15                 |                             | 32             | WS  | 104.00    | As above.  |
|                     | M701       | Card.   | Dynamic                 | Die-Cast Zinc | Vocal/Instr.       | 250B   | 40-16                      |  | A3F                 | 15                 |                             | 32             | WS  | 134.00    | Includes anti-shock mount, holder, and case.   |
|                     | M800       | Card.   | Dynamic                 | Die-Cast Zinc | Vocal/Instr.       | 250B   | 40-18                      |  | A3F                 | 15                 |                             | 48             | W   | 160.00    | As above.  |
|                     | M50        | Card.   | Dynamic                 | Zinc Plastic  |                    | 250B   | 50-15                      |  | A3F                 | 15                 |                             | 22             | W   | 76.00     | Includes holder.   |
| PIIONEER            | DM-51      |   |                         |               |                    |  |                            |  |                     |                    |                             | 11             |   | 100.00    |  |
|                     | DM-21      |   |                         |               |                    |  |                            |  |                     |                    |                             | 13             |   | 30.00     |  |
| SANSUI              | DM-7       | x2  |                         | Alum.         | Vocal              | 600B   | 100-10                     | 76   | Phone               | 20                 | Phone                       | 28             | W   | 75.00     |  |
|                     | DM-5       | x2  |                         | Alum.         | Vocal              | 500B   | 100-10                     | 77   | Phone               | 16 1/2             | Phone                       | 13             | W   | 30.00     |  |
|                     | DM-3       | x2  |                         | Alum.         | Vocal              | 500B   | 100-10                     | 77   | Phone               | 10                 | Phone                       | 12             | W   | 20.00     |  |
|                     | EM-5       | x2  |                         | Plastic       | Vocal              | 1k. B  | 100-10                     | 72   | Phone               | 6 1/2              | Phone                       | 12             | W   | 35.00     |  |
| SCHOEPS             | CMC 52S    | Omni  | Condenser               | Nckl. & Brass | Spaced Omni        | 35B  | 20-20                      | †  | XLR-3M              |                    |                             | 3 3/4          |   | 930.00    | †1.2 mV/ $\mu$ bar (at 1 kHz into 1 kilohm).   |
|                     | CMC 54     | Card.   | Condenser               | Nckl. & Brass | Piano & Spot       | 35B  | 40-20                      | †  | XLR-3M              |                    |                             | 3 3/4          |   | 890.00    |  |
|                     | CMC 541    | Hyper. Card.  | Condenser               | Nckl. & Brass | Film/Video         | 35B  | 40-20                      | †  | XLR-3M              |                    |                             | 3 3/4          |   | 1040.00   |  |
|                     | CMC 521    | Sub Card.   | Condenser               | Nckl. & Brass | Vocal              | 35B  | 30-20                      | †  | XLR-3M              |                    |                             | 3 3/4          |   | 950.00    |  |
|                     | CMC 58     | Figure 8  | Condenser               | Nckl. & Brass | Stereo Pair        | 35B  | 40-16                      | †  | XLR-3M              |                    |                             | 3 3/4          |   | 1130.00   |  |
|                     | BLM 53     | Hemi.   | Condenser               | Alum.         | Stage              | 35B  | 20-20                      | †  | XLR-3M              |                    |                             | 26             |   | 1160.00   |  |
|                     | CMH 541C   | Hyper Card.   | Condenser               | Brass         | Vocal              | 35B  | 50-18                      | †  | XLR-3M              |                    |                             | 6 1/2          |   | 1215.00   |  |
|                     | MSTC 54    | Card. x2  | Condenser               | Nckl. & Brass | ORTF               | 35B  | 40-20                      | †  | XLR-5M              |                    |                             | 9              |   | 1960.00   |  |
|                     | CMTS 501   | Omni/Card./Fig. 8 x2  | Condenser               | Nckl. & Brass | M-S/X-Y            | 250B   | 40-16                      | †  | XLR-5M              |                    |                             | 12 1/2         |   | 3250.00   |  |
| SENNHEISER          | ME88       | Spot  | Back Electret Condenser | Alum.         | Distant            |  | 50-15                      | †  |                     |                    |                             | 12             |   | 315.00    | †Requires K3U power supply (d.c. or 48-V phantom power), \$210.00.                                 |
|                     | MKE2-3     | Omni  | Back Electret Condenser |               | Vocal/Instr.       |  | 40-20                      | †  |                     |                    |                             |                |   | 254.00    | Lavalier.  |
|                     | MKE40-3    | Card.   | Back Electret Condenser | Alum.         | Vocal/Instr.       |  | 50-20                      | †  |                     |                    |                             |                |   | 289.00    |  |
|                     | MKH416     | Shotgun   | Back Electret Condenser |               | Distant            |  | 40-20                      |  | XLR                 |                    |                             | 18             |   | 925.00    | Uses 48-V phantom power.   |
| (Continued)         | 20P8U3     | Omni  | Condenser               |               | Vocal/Instr.       |  | 20-20                      |  | XLR                 |                    |                             | 20             |   | 975.00    |  |



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# MICROPHONES

| MANUFACTURER              | Model        | Directional Pattern Plus Channels:<br>Stereo = X2, Quad = X4, M.S. = M.S. | Operating Principle     | Case Material    | Most Common Use  | Actual Impedance, 1 kHz, Ohms,<br>Balanced = B | Operating Range, Hz to kHz | Open-Circuit Sensitivity,<br>1 kHz, -dB, re. 1 Volt/1 $\mu$ bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment<br>End of Cable | Weight, Ounces | Wind Screen = W, On/Off Switch = C, L<br>Switched Low or Proximity Filter = S, F | Price, \$ | Notes  |
|---------------------------|--------------|---|-------------------------|------------------|------------------|--|----------------------------|---|---------------------|--------------------|---|----------------|--|-----------|--|
| SENNHEISER<br>(Continued) | MKH-30P8U3   | Figure 8  | Condenser               |                  | Vocal/<br>Instr. | 40-20  |                            | XLR   |                     | 21                 |   |                |  | 995.00    | As above.  |
|                           | MKH-40P8U3   | Card.   | Condenser               |                  | Vocal/<br>Instr. | 40-20  |                            | XLR   |                     | 20                 |   |                |  | 975.00    | As above.  |
|                           | MKH-70P8U3   | Shotgun   | Condenser               |                  | Distant          | 40-20  |                            | XLR   |                     |                    |   |                |  | 1479.00   | As above.  |
|                           | MD518        | Card.   | Pressure Gradient       | Alum.            | Vocal            | 2008   | 50-16                      | XLR   |                     | 5.6                |   |                |  | 219.00    |  |
|                           | MD409        | Card.   | Pressure Gradient       | Alum. ABS        | Vocal/Instr.     | 2008   | 50-15                      | XLR   |                     |                    |   |                |  | 269.00    |  |
|                           | MD421        | Card.   | Pressure Gradient       | ABS              | Vocal/Instr.     | 2008   | 30-17                      | XLR   |                     |                    |   |                |  | 399.00    |  |
|                           | MD431        | Super Card.   | Pressure Gradient       | Alum.            | Vocal            | 2508   | 40-16                      | XLR   |                     |                    |   |                |  | 429.00    | Hand-held.   |
|                           | MD441        | Super Card.   | Pressure Gradient       | Alum.            | Vocal/Instr.     | 2008   | 30-20                      | XLR   |                     |                    |   |                |  | 559.00    | As above.  |
|                           | MKE4032      | Super Card.   | Back Electret Condenser | Alum.            | Vocal            | 1408   | 70-20                      | XLR   |                     |                    |   |                |  | 595.00    |  |
|                           | ME20         | Omni  | Back Electret Condenser | Alum.            | Distant          |  | 50-15                      | †   |                     | 4                  |   |                |  | 112.00    |  |
|                           | ME40         | Card.   | Back Electret Condenser | Alum.            | Distant          |  | 50-15                      | †   |                     | 4                  |   |                |  | 165.00    |  |
|                           | ME80         | Shotgun   | Back Electret Condenser | Alum.            | Distant          |  | 50-15                      | †   |                     | 5                  |   |                |  | 239.00    |  |
| SHURE                     | Beta 58      | Super Card.   | Dynamic                 | Steel            | Vocal            | 1508   | 50-16                      | 71  | A3M                 |                    |   | 9.3            |  | 258.00    | Four-way response-tailoring switch. Lavalier. Includes multiple instrument mounts.   |
|                           | Beta 57      | Super Card.   | Dynamic                 | Steel            | Instr.           | 1508   | 50-16                      | 71.5  | A3M                 |                    |   | 9.2            |  | 258.00    |  |
|                           | SM7          | Card.   | Dynamic                 | Alum. & Steel    | Vocal/Record     | 1508   | 40-16                      | 79  | A3M                 |                    |   | 2.7            | F  | 550.00    |  |
|                           | SM11         | Omni  | Dynamic                 | Alum.            | Record           | 2008   | 50-15                      | 85  |                     | 4                  | A3M   | 0.28           |  | 102.00    |  |
|                           | SM17         | Omni  | Dynamic                 | Alum.            | Strings          | 2008   | 50-15                      | 84.5  |                     | 10                 | A3M   | 0.28           |  | 108.00    |  |
|                           | SM18         | Hemi. Card.   | Dynamic                 | Foam & Plastic   | Vocal            | 1808   | 150-10                     | 73.0  |                     | 9                  | A3M   | 3.9            |  | 98.00     |  |
|                           | SM48         | Card.   | Dynamic                 | Die-Cast         | Vocal            | 2708   | 55-14                      | 77.5  | A3M                 |                    |   | 13.1           |  | 126.00    |  |
|                           | SM57-CN      | Card.   | Dynamic                 | Die-Cast         | Instr.           | 3108   | 40-15                      | 75.5  | A3M                 | 25                 | A3M   | 10             |  | 160.00    |  |
|                           | SM57-LC      | Card.   | Dynamic                 | Die-Cast         | Instr.           | 3108   | 40-15                      | 75.5  | A3M                 |                    |   | 10             |  | 137.00    |  |
|                           | SM58-CN      | Card.   | Dynamic                 | Die-Cast         | Vocal            | 3108   | 50-15                      | 75.5  | A3M                 | 25                 | A3M   | 10.5           |  | 199.00    |  |
|                           | SM58-LC      | Card.   | Dynamic                 | Die-Cast         | Vocal            | 3108   | 50-15                      | 75.5  | A3M                 |                    |   | 10.5           |  | 176.00    | Switchable -10 dB pad.   |
|                           | SM59         | Card.   | Dynamic                 | Zinc & Steel     | Vocal/Instr.     | 1508   | 50-15                      | 83.0  | A3M                 |                    |   | 7.6            |  | 208.00    |  |
|                           | SM61         | Omni  | Dynamic                 | Alum.            | Vocal            | 1758   | 50-14                      | 82.0  | A3M                 |                    |   | 5.2            |  | 134.00    |  |
|                           | SM62         | Card.   | Dynamic                 | Alum. & Steel    | Vocal            | 1808   | 100-10                     | 82.0  | A3M                 |                    |   | 4              |  | 148.00    |  |
|                           | SM63         | Omni  | Dynamic                 | Alum.            | Speech           | 2708   | 50-20                      | 76.0  | A3M                 |                    |   | 3.5            |  | 127.00    |  |
|                           | SM63L        | Omni  | Dynamic                 | Alum.            | Speech           | 2708   | 50-20                      | 76.0  | A3M                 |                    |   | 4.3            |  | 145.00    |  |
|                           | SM77EB       | Card.   | Dynamic                 | Alum.            | Instr.           | 2508   | 50-15                      | 79.0  | A3M                 |                    |   | 6              |  | 115.00    |  |
|                           | SM78EB       | Card.   | Dynamic                 | Alum.            | Vocal            | 2508   | 50-15                      | 79.0  | A3M                 |                    |   | 7.2            |  | 140.00    |  |
|                           | SM80         | Omni  | Condenser               | Steel            | Instr./Studio    | 858  | 20-20                      | 65  | A3M                 |                    |   | 8              | WF   | 380.00    |  |
|                           | SM81         | Card.   | Condenser               | Steel            | Studio Remote    | 858  | 20-20                      | 65  | A3M                 |                    |   | 8              | WF   | 380.00    | As above. Line level; includes limiter; battery or phantom powered. Lavalier, includes preamp; battery or phantom powered. As above. |
|                           | SM82         | Card.   | Condenser               | Steel            | Brdcst.          | 2508   | 40-15                      | 23  | A3M                 |                    |   | 14.4           | W  | 410.00    |  |
|                           | SM83         | Omni  | Condenser               | Brass            | Vocal            | 908  | 80-20                      | 69.0  |                     | 10/10              | A3M   | 1.58           | W  | 223.50    |  |
|                           | SM84         | Super Card.   | Condenser               | Brass            | Vocal            | 908  | 80-20                      | 72.0  |                     | 10/10              | A3M   | 1.58           | W  | 300.00    |  |
|                           | SM85         | Card.   | Condenser               | Alum.            | Vocal            | 858  | 50-15                      | 74  | A3M                 |                    |   | 6.3            |  | 290.00    |  |
|                           | SM87         | Super Card.   | Condenser               | Alum.            | Vocal            | 858  | 50-18                      | 74  | A3M                 |                    |   | 6.3            |  | 329.00    |  |
|                           | SM89         | Hyper Card.   | Condenser               | Alum.            | Distant          | 1008   | 60-20                      | 53  | A3M                 |                    |   | 6.9            |  | 900.00    |  |
|                           | SM90         | Omni  | Condenser               | Die-Cast & Steel | †                | 908  | 20-20                      | 66.0  | Tiny QG             | 25                 | A3M   | 9.9            | F  | 310.00    |  |
|                           | SM91         | Hemi. Card.   | Condenser               | Die-Cast & Steel | †                | 908  | 20-20                      | 69.0  | Tiny QG             | 25                 | A3M   | 9.3            | F  | 310.00    |  |
|                           | SM94         | Card.   | Condenser               | Steel & Brass    | Instr.           | 2008   | 40-16                      | 69  | A3M                 |                    |   | 8.8            |  | 250.00    | Optimized for sampling.  |
|                           | SM96         | Card.   | Condenser               | Steel & Brass    | Vocal            | 2008   | 70-16                      | 74  | A3M                 |                    |   | 9.2            |  | 250.00    |  |
|                           | SM98         | Card.   | Condenser               | Brass            | Instr.           | 908  | 40-20                      | 80.0  | Tiny QG             | 15                 | A3M   | 0.4            | WF   | 250.00    |  |
|                           | SM99         | Super Card.   | Condenser               | Steel & Brass    | Podium           | 908  | 80-20                      | 73.0  | A3M                 |                    |   | 5.8            | W  | 240.00    |  |
|                           | Prologue 8L  | Card.   | Dynamic                 | Die-Cast         | Home Record      | 600  | 80-10                      | 76.5  | Attached            | 15                 | Mini/Phone                                  | 9.7            | S  | 53.75     |  |
|                           | Prologue 10H | Card.   | Dynamic                 | Die-Cast         | Home Record      | Hi-Z   | 80-10                      | 59.5  | A3M                 |                    |   | 9.1            | S  | 47.75     |  |
|                           | Prologue 10L | Card.   | Dynamic                 | Die-Cast         | Home Record      | 6008   | 80-10                      | 76.5  | A3M                 |                    |   | 9.1            | S  | 42.25     |  |
|                           | Prologue 12H | Card.   | Dynamic                 | Die-Cast         | Home Record      | Hi-Z   | 80-10                      | 59.5  | A3M                 |                    |   | 9.7            | S  | 64.00     |  |
|                           | Prologue 12L | Card.   | Dynamic                 | Die-Cast         | Home Record      | 6008   | 80-10                      | 76.5  | A3M                 |                    |   | 9.7            | S  | 58.50     |  |
|                           | Prologue 14H | Card.   | Dynamic                 | Die-Cast         | Home Record      | Hi-Z   | 40-13                      | 59.5  | A3M                 |                    |   | 10             | S  | 77.00     |  |
| (Continued)               |              |   |                         |                  |                  |  |                            |   |                     |                    |   |                |  |           |  |

# When we play the numbers game, we play for keeps.



## Introducing the TL-3300 18-Bit/8X Oversampling CD Player with Digital Time Lens and 22-function Remote Control.

Frankly, a lot of stereo specs are more confusing than informative. But the benefits of increased digital oversampling rates are tangible and audible. At least when they're incorporated in a player as advanced as the TL-3300. It literally extracts *eight times* more information from a CD than conventional players can. Combined with its ability to resolve amplitude information *400% better* than a 16-bit player, the TL-3300 dramatically reduces noise levels and distortion while enhancing musical detail and faithfully reproducing CDs' full dynamic range. Add dual D/A converters for improved phase linearity, meticulously designed analog output circuitry and Carver's unique Digital Time Lens feature you have a player that can re-define the Compact Disc experience. High-end harshness melts away to reveal the intimate details of the performance and the space in which it was recorded.

Naturally, the TL-3300 is as easy to use as it is easy to listen to. All major transport and programming functions (plus the Digital Time Lens) are at your fingertips on the 33-key wireless remote control. Program up to 22 random tracks, repeat any segment, individual song or programmed sequence, or access selections backwards or forwards by track or in real time with audible cueing.

Whether you're looking for a CD player with leading edge technology or simply desire the finest overall quality component possible, you owe it to yourself to discover just how much more the TL-3300 can offer.

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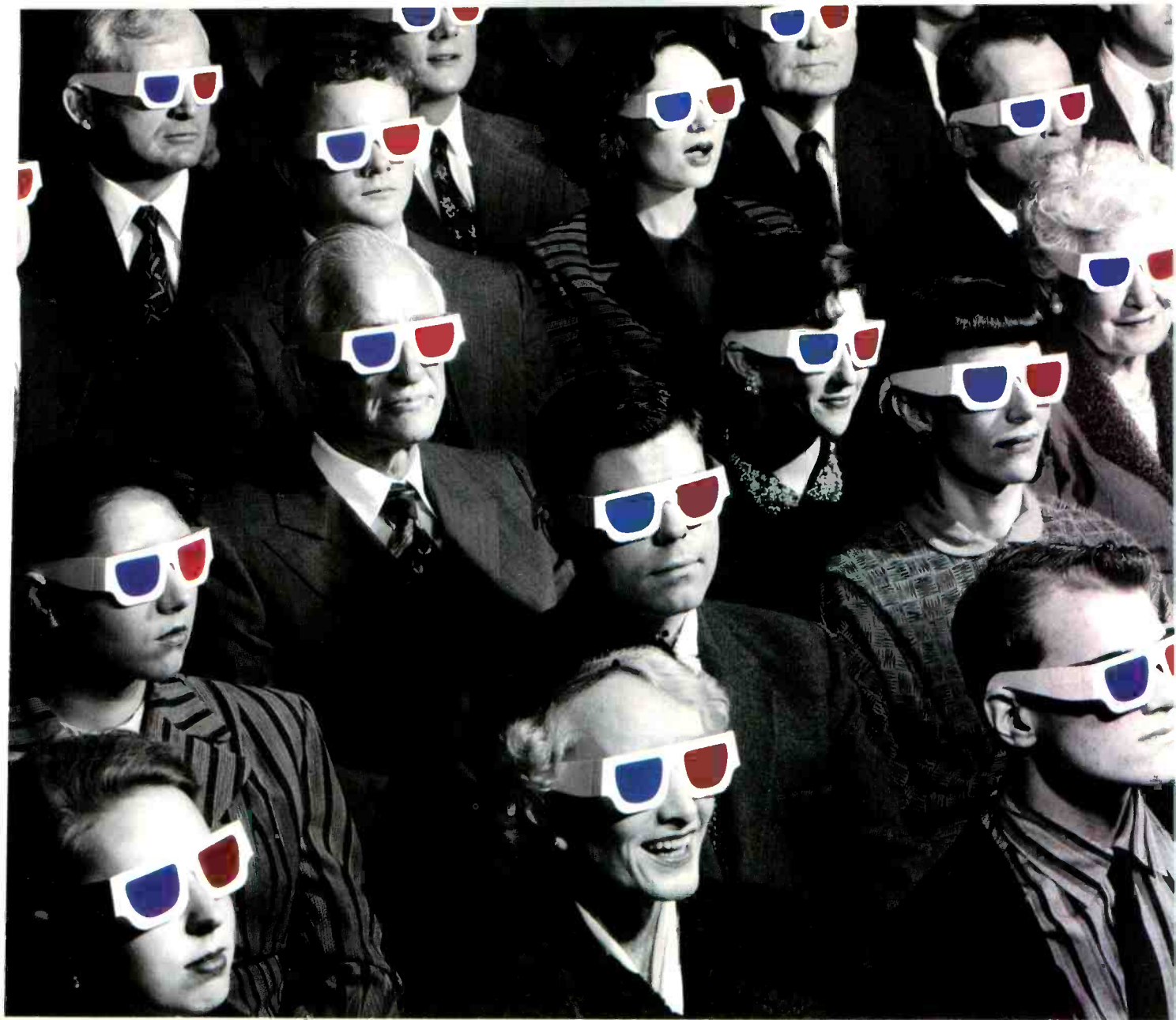
ACCURATE

CARVER CORPORATION, P.O. Box 1237, Lynnwood, WA 98046  
For more information or the dealer nearest you, call 1-800-443-CAVR



# MICROPHONES

| MANUFACTURER         | Model           | Directional Pattern Plus Channels:<br>Stereo = 2, Quad = 4, M-S = M-S | Operating Principle | Case Material          | Most Common Use                 | Actual Impedance, $\Omega$<br>Balanced - B | Operating Range, Hz to kHz<br>Open-Circuit Sensitivity<br>1 kHz, $\pm$ dB, re: 1 Volt/1 $\mu$ bar | Mike Connector Type | Cable Length, Feet | Connector Type on Equipment<br>End of Cable | Weight, Ounces | Wire Screen = W, Ought Switch = S,<br>Switched Low or Proximity Filter = F | Price, \$ | Notes   |
|----------------------|-----------------|---|---------------------|------------------------|---------------------------------|--|---|---------------------|--------------------|---|----------------|--|-----------|---|
| SHURE<br>(Continued) | Prologue 14L    | Card.   | Dynamic             | Die-Cast Alum.         | Home Record Instr./Record Vocal | 600B                                       | 40-13   | 76.5                | A3M                |   | 10             | S  | 71.50     |   |
|                      | Prologue 16L    | Card.   | Condenser           | Steel                  | Vocal                           | 600B                                       | 50-15   | 69.5                | A3M                |   | 4.7            | S  | 116.00    |   |
|                      | Prologue 22H-LC | Super Card.   | Dynamic             | Steel                  | Vocal                           | Hi-Z                                       | 40-13   | 59.0                | A3M                | 15  | Phone          | 9.5  | 82.00     | Lockable switchplate.                                     |
|                      | Prologue 22H-CS | Super Card.   | Dynamic             | Steel                  | Vocal                           | Hi-Z                                       | 40-13   | 59.0                | A3M                |   | 9.5            | S  | 96.25     |   |
|                      | Prologue 22L-LC | Super Card.   | Dynamic             | Steel                  | Vocal                           | Lo-Z                                       | 40-13   | 76.5                | A3M                | 25  | A3M            | 9.5  | 76.50     | As above.   |
|                      | Prologue 22L-CS | Super Card.   | Dynamic             | Steel                  | Vocal                           | Lo-Z                                       | 40-13   | 76.5                | A3M                |   | 9.3            | S  | 98.75     |   |
|                      | Prologue 24H-LC | Super Card.   | Dynamic             | Steel                  | Vocal                           | Hi-Z                                       | 40-13   | 59.0                | A3M                | 15  | Phone          | 9.3  | 95.00     |   |
|                      | Prologue 24H-CS | Super Card.   | Dynamic             | Steel                  | Vocal                           | Hi-Z                                       | 40-13   | 59.0                | A3M                |   | 9.3            | S  | 109.00    |   |
|                      | Prologue 24L-LC | Super Card.   | Dynamic             | Steel                  | Vocal                           | Lo-Z                                       | 40-13   | 76.5                | A3M                | 25  | A3M            | 9.3  | 89.50     |   |
|                      | Prologue 24L-CS | Super Card.   | Dynamic             | Steel                  | Vocal                           | Lo-Z                                       | 40-13   | 76.5                | A3M                |   | 9.3            | S  | 111.75    |   |
|                      | 512SB-G18       | Card.   | Dynamic             | Die-Cast Die-Cast Har- | Vocal                           | 170B                                       | 80-13   | 82.0                |                    | 4   | None           | 29   | 66.75     | 18-inch gooseneck.  |
|                      | 515SD           | Card.   | Dynamic             | Die-Cast Die-Cast Har- | Vocal/Music                     | 170B/Hi-Z                                  | 80-13   | †                   | A3M                |   | 9              | S  | 49.00     | †At lo-Z, -82.5 dB; at hi-Z, -59.0 dB.                    |
|                      | 520D            | Omni  | Controlld. Magnetic | Die-Cast               | Harmonica                       | 160B/Hi-Z                                  | 100-5   | †                   |                    | 20  | None           | 22   | 99.00     | †As above but -73.0 and -56.0 dB. "Green Bullet."         |
|                      | 545D            | Card.   | Dynamic             | Die-Cast Die-Cast      | Vocal/Instr. Vocal              | 275B/Hi-Z                                  | 50-15   | †                   | A3M                |   | 9              | S  | 110.00    | †As above but -78.0 and -55.0 dB.                         |
|                      | 545L            | Card.   | Dynamic             | Die-Cast Die-Cast      | Vocal                           | 250B                                       | 50-15   | 77.5                |                    | 20  | None           | 12.5   | 109.75    | Lavalier.   |
|                      | 545SC-LC        | Card.   | Dynamic             | Die-Cast Die-Cast      | Vocal                           | 275B/Hi-Z                                  | 50-15   | †                   | A3M                |   | 9              | S  | 114.00    | †At lo-Z, -78.0 dB; at hi-Z, -55.0 dB.                    |
|                      | 545SD-CN        | Card.   | Dynamic             | Die-Cast Die-Cast      | Vocal                           | 250B/Hi-Z                                  | 50-15   | †                   | A3M                | 20  | A3M            | 9  | 135.00    | †As above.  |
|                      | 565D            | Card.   | Dynamic             | Die-Cast Die-Cast      | Vocal                           | 250B/Hi-Z                                  | 50-15   | †                   | A3M                |   | 10.5           | S  | 122.00    | †As above but -76.0 and -54.0 dB.                         |
|                      | 565SD-LC        | Card.   | Dynamic             | Die-Cast Die-Cast      | Vocal                           | 250B/Hi-Z                                  | 50-15   | †                   | A3M                |   | 10.5           | S  | 124.00    | †As above.  |
|                      | 565SD-CN        | Card.   | Dynamic             | Die-Cast Die-Cast      | Vocal                           | 250B/Hi-Z                                  | 50-15   | †                   | A3M                | 20  | A3M            | 10.5   | 147.00    | †As above.  |
|                      | 570S            | Omni  | Dynamic             | Steel                  | Vocal                           | 180B                                       | 50-12   | 81.5                |                    | 30  | None           | 4  | 150.00    | Lavalier.   |
|                      | 575SB           | Omni  | Dynamic             | Alloy                  | Vocal                           | 200  | 40-15   | 79.0                |                    | 7   | S              | 5  | 55.00     | As above.   |
|                      | 579SB           | Omni  | Dynamic             | Alum.                  | Vocal                           | 200B                                       | 50-14   | 78.5                | A3M                |   | 5.5            | S  | 90.00     | Lockable switchplate.                                     |
|                      | 587SB           | Card.   | Dynamic             | Die-Cast               | Vocal                           | 270B                                       | 55-14   | 77.5                | A3M                |   | 13.1           | S  | 95.00     | As above.   |
|                      | 588SD           | Card.   | Dynamic             | Die-Cast               | Vocal                           | 180B/Hi-Z                                  | 80-13   | †                   | A3M                |   | 10             | S  | 60.00     | †At lo-Z, -82.0 dB; at hi-Z, -59.5 dB. As above.          |
|                      | 800HF           | Super Card.   | Condenser           | Cellular               | †                               | 600B                                       | 300-10  | †                   |                    | 9   |                | 1.8  | 134.75    | †17 to -59 dB. Includes preamp.                           |
|                      | 809             | Omni  | Condenser           | Die-Cast & Steel       | †                               | 600B                                       | 50-20   | 68.0                | Tiny QG            | 25-10                                       | A3M            | 9.9  | 200.00    | †Surface mount. Boundary effect; includes preamp.         |
|                      | 819             | Hemi. Card.   | Condenser           | Die-Cast & Steel       | †                               | 600B                                       | 60-20   | 71.0                | Tiny QG            | 25-10                                       | A3M            | 9.3  | 210.00    | All as above.   |
|                      | 839             | Omni  | Condenser           | Brass                  | Vocal                           | 600B                                       | 80-20   | 70.0                |                    | 5/10  | A3M            | 0.21   | 127.00    | Lavalier; battery or phantom powered.                     |
|                      | 849             | Card.   | Condenser           | Steel & Alum.          | Instr.                          | 600B                                       | 40-16   | 70.0                | A3M                |   | 8.8            | S  | 168.00    | Powering as above.  |
|                      | 869             | Card.   | Condenser           | Steel & Alum.          | Vocal                           | 600B                                       | 70-16   | 76.0                | A3M                |   | 9.2            | S  | 168.00    | Powering as above.  |
|                      | PE10D           | Card.   | Dynamic             | Zinc                   | Instr.                          | Lo/Hi-Z                                    | 80-13   | †                   | A3M                |   | 11             | S  | 72.00     | †At lo-Z, -82.5 dB; at hi-Z, -59.0 dB.                    |
|                      | PE15D           | Card.   | Dynamic             | Zinc                   | Vocal                           | Lo/Hi-Z                                    | 80-13   | †                   | A3M                |   | 12             | S  | 92.00     | †As above but -82.0 and -59.5 dB.                         |
|                      | PE65L           | Card.   | Dynamic             | Zinc                   | Instr.                          | 150B                                       | 50-15   | 77.5                | A3M                |   | 9              | S  | 142.00    |   |
|                      | PE66L           | Card.   | Dynamic             | Zinc                   | Instr.                          | 150B                                       | 40-15   | 75.5                | A3M                |   | 9              | S  | 142.00    |   |
|                      | PE65L           | Card.   | Dynamic             | Zinc                   | Vocal                           | 150B                                       | 50-15   | 77.5                | A3M                |   | 10.5           | S  | 164.00    |   |
|                      | PE66L           | Card.   | Dynamic             | Zinc                   | Vocal                           | 150B                                       | 50-15   | 75.5                | A3M                |   | 10.5           | S  | 164.00    |   |
|                      | W15HT/58        | Card.   | Dynamic             | Alloy                  | Vocal                           |  | 50-15   |                     |                    |   | 14.5           | S  | 750.00    | Wireless; available as diversity or non-diversity system. |
|                      | W15HT/87        | Super Card.   | Condenser           | Alloy                  | Vocal                           |  | 50-18   |                     |                    |   | 8.5            | S  | 900.00    | As above.   |
|                      | WLB3            | Omni  | Condenser           | Brass                  | Vocal                           | 1.2k                                       | 50-16   | 65.5                |                    | 4   | 4-Pin Mini     | 0.21   | 165.00    | Wireless; lavalier only.                                  |
|                      | WLB4            | Super Card.   | Condenser           | Brass                  | Instr.                          | 1.2k                                       | 50-16   | 68                  |                    | 4   | 4-Pin Mini     | 0.21   | 190.00    | As above.   |
|                      | WM98            | Super Card.   | Condenser           | Brass                  | Instr.                          | 1.2k                                       | 40-20   | 74.0                |                    | 2.7   | 4-Pin Mini     | 0.4  | 165.00    | Wireless; mike only.                                      |
| SONDTRIM             | STR-PPS         | Omni  | Electret Condenser  | Plastic                | Speech                          | 250B                                       | 50-15   |                     | XLR-3M             | 9   | XLR-3M         | 2  | 265.00    | Lavalier.   |
| SONY                 | FV-X30          | Card.   | Dynamic             | Plastic                | Vocal                           | 600  | 80-12   |                     | Attached           | 9.8   | †              | 7.8  | 35.00     | †Mini/phone; includes adaptor.                            |
|                      | FV-X50          | Card. x2  | Dynamic             | Zinc Die-Cast          | Vocal/Instr.                    | 600  | 80-15   |                     | XLR                | 16.4  | †              | 9  | 56.00     | †As above.  |
|                      | ECM-909         | Var. x2   | Electret Condenser  | Plastic                | Instr.                          | 1k   | 100-15  |                     | Attached           | 4.9   | Mini           | 3.2  | 100.00    |   |
|                      | F-99LT          | Uni x2  | Dynamic             | Plastic                | Vocal/Instr.                    | †  | 80-12   |                     | Attached           | 10.4  | Mini           | 5.3  | 55.00     | †Mono, 1 kilohm; stereo, 500 ohms.                        |
| SPEIDEN              | SF-12           | Fig. 8 x2   | Ribbon              | Iron                   | Concert Hall Instr.             | 200B                                       | 30-16   | 77                  | Neutrik A5M        | 20  | Neutrik A3M x2 | 12   | 975.00    | Single-point stereo.                                      |
|                      | MF-12           | Figure 8  | Ribbon              | Iron                   | Concert Hall Instr.             | 200B                                       | 30-16   | 77                  | Neutrik A3M        | 20  | Neutrik A3M    | 8  | 575.00    |   |
| TECHNICS             | RP-V340         | Card.   | Dynamic             | Alum.                  | Video Vocal/Instr.              |  | 100-10  |                     |                    |   | 9              | W  | 39.00     |   |
|                      | RP-V370         | Card.   | Dynamic             | Alum.                  | Video Vocal/Instr.              |  | 40-12   |                     |                    |   | 12             | W  | 59.00     |   |



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Technics Surround Sound A/V Receiver.

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The science of sound



# HEADPHONES

| MANUFACTURER    | Model   | Operating Principle | Frequency Range, Hz to kHz | Impedance, Ohms | Sensitivity, db SPL for 1 mW input | Maximum Input, mW | THD at 95 db SPL, % | Cord Length, Feet | Cord Style: Flat = F, Coiled = C, Round = R | Plug Type: 3.5mm Mini = M, 1/4" Phone = P, Adaptor Included = A | Individual Volume Controls? | Biomedical A Supra-aural = S, Over-Ear Design = O, In-Ear = I, Adjustable = A, Folding = F | Cover Material on Ear Cup | Weight, Ounces  | Price, \$           | Notes                                     |  |
|-----------------|---------|---------------------|----------------------------|-----------------|------------------------------------|-------------------|---------------------|-------------------|---|---|-----------------------------|--|---------------------------|-----------------|---------------------|---|--|
| AIWA            | HP-X80  | Dynamic             | 5-25                       | 40              | 102                                | 1W                | 9.8                 | C                 | A   | No  | C                           | A  | Foam                      | 4.9             | 95.00               |   |  |
|                 | HP-X50  | Dynamic             | 5-24                       | 40              | 102                                | 1W                | 8.2                 | F                 | A   | No  | C                           | A  | Foam                      | 4.9             | 70.00               |   |  |
|                 | HP-X30  | Dynamic             | 5-23                       | 40              | 102                                | 1W                | 8.2                 | F                 | A   | No  | C                           | A  | Foam                      | 4.9             | 50.00               |   |  |
|                 | HP-A550 | Dynamic             | 7-20                       | 40              | 103                                | 200mW             | 6.6                 | F                 | A   | No  | O                           | A  | Foam                      | 3               | 33.00               |   |  |
|                 | HP-A350 | Dynamic             | 10-20                      | 40              | 103                                | 200mW             | 4.9                 | F                 | A   | No  | O                           | A  | Foam                      | 2.6             | 27.00               |   |  |
|                 | HP-A250 | Dynamic             | 20-20                      | 32              | 97                                 | 100mW             | 4.9                 | F                 | A   | No  | O                           | F  | Foam                      | 1.7             | 17.00               |   |  |
|                 | HP-A150 | Dynamic             | 20-20                      | 32              | 97                                 | 100mW             | 4.9                 | F                 | A   | No  | O                           | A  | Foam                      | 1.6             | 12.00               |   |  |
|                 | HP-V88  | Dynamic             | 8-25                       | 16              | 105                                | 40mW              | 3.9                 | F                 | A   | No  | I                           | N  | Foam                      | 0.3             | 80.00               |   |  |
|                 | HP-V57  | Dynamic             | 10-25                      | 16              | 104                                | 40mW              | 3.9                 | F                 | M   | Yes   | I                           | N  | Foam                      | 0.2             | 35.00               |   |  |
|                 | HP-V53  | Dynamic             | 10-25                      | 16              | 104                                | 40mW              | 3.9                 | F                 | M   | No  | I                           | N  | Foam                      | 0.2             | 28.00               |   |  |
|                 | HP-V25  | Dynamic             | 15-30                      | 16              | 105                                | 40mW              | 3.9                 | F                 | M   | No  | I                           | N  | Foam                      | 0.18            | 22.00               |   |  |
|                 | HP-V12  | Dynamic             | 15-30                      | 16              | 105                                | 40mW              | 3.9                 | F                 | M   | No  | I                           | N  | Foam                      | 0.18            | 12.00               |   |  |
| AKG             | K-2     | Dynamic             | 30-18                      | 200             | 92                                 | 6.3V              | 0.9                 | 8                 | R   | M/A   | No                          | S  | A                         | Plastic         | 3.2                 | 45.00                                     |  |
|                 | K-45    | Dynamic             | 30-18                      | 200             | 92.5                               | 6.3V              | 0.9                 | 10                | R   | P   | No                          | S  | A                         | Plastic         | 4.5                 | 60.00                                     |  |
|                 | K-130   | Dynamic             | 20-20                      | 200             | 93.5                               | 9V                | 0.7                 | 9                 | R   | P   | No                          | S  | A                         | Plastic         | 4.4                 | 70.00                                     |  |
|                 | K-135S  | Dynamic             | 25-18                      | 150             | 92                                 | 8.9V              | 0.7                 | 10                | R   | P   | No                          | S  | A                         | Plastic         | 5.6                 | 85.00                                     |  |
|                 | K-141M  | Dynamic             | 20-20                      | 600             | 97.5                               | 11V               | 0.5                 | 10                | R   | P   | No                          | S  | A                         | Metal & Plastic | 6.9                 | 100.00                                    |  |
|                 | K-145S  | ES/Dyn.             | 20-24                      | 200             | 89                                 | 8.9V              | 0.5                 | 10                | R   | P   | No                          | S  | A                         | Metal & Plastic | 6                   | 110.00                                    |  |
|                 | K-240M  | Dynamic             | 15-20                      | 600             | 88                                 | 11V               | 0.3                 | 10                | R   | P   | No                          | C  | A                         | Metal & Plastic | 8.5                 | 120.00                                    |  |
|                 | K-240DF | Dynamic             | 15-20                      | 600             | 88                                 | 11V               | 0.3                 | 8½                | R   | P   | No                          | C  | A                         | Metal & Plastic | 8.5                 | 150.00                                    |  |
|                 | K-260   | Dynamic             | 10-20                      | 600             | 88                                 | 11V               | 0.2                 | 10                | R   | P   | No                          | C  | A                         | Plastic         | 9.2                 | 170.00                                    |  |
|                 | K-340   | ES/Dyn.             | 15-25                      | 400             | 88                                 | 10V               | 0.1                 | 10                | F/C   | P   | No                          | C  | A                         | Metal & Plastic | 13.5                | 235.00                                    |  |
|                 | K-280   | Dynamic             | 20-20                      | 75              | 94                                 | 4V                | 0.2                 | 10                | F   | P   | No                          | C  | A                         | Metal & Plastic | 9.6                 | 195.00                                    |  |
|                 | K-55    | Dynamic             | 25-18                      | 150             | 92                                 | 5.5V              | 0.9                 | 10                | F   | M/P   | No                          | S  | A                         | Metal & Plastic | 3.2                 | 50.00                                     |  |
| K-21TV          | Dynamic | 25-17.5             | 150                        | 92              | 5.5V                               | 0.9               | 20                  | F                 | M/P   | No  | S                           | A  | Metal & Plastic           | 3.2             | 60.00               |   |  |
| K-270           | Dynamic | 20-20               | 75                         | 92              | 4V                                 | 0.2               | 10                  | F                 | P   | Yes   | C                           | A  | Metal & Plastic           | 9.6             | 195.00              |   |  |
| AUDIOT-TECHNICA | SG410   | Dynamic             | 40-20                      | 4-16            | 92                                 |                   |                     | 3                 | F   | M/A   | No                          | D  | A                         | Foam            | 1                   | 14.95                                     |  |
|                 | SG430   | Dynamic             | 35-20                      | 4-16            | 96                                 |                   |                     | 4                 | F   | M/A   | No                          | I  | N                         | Foam            | 0.3                 | 24.95                                     |  |
|                 | SG450   | Dynamic             | 20-20                      | 4-16            | 96                                 |                   |                     | 3                 | F   | M/A   | No                          | I  | N                         | Plastic         | 0.5                 | 29.95                                     |  |
|                 | SG600CD | Dynamic             | 20-20                      | 4-16            | 89                                 |                   |                     | 6                 | F   | M/A   | No                          | S  | A                         | Vinyl           | 2.8                 | 39.95                                     |  |
|                 | SG750CD | Dynamic             | 20-20                      | 35              | 100                                |                   |                     | 7.6               | F   | P   | No                          | S  | A                         | Vinyl           | 4.7                 | 49.95                                     |  |
|                 | AP1000  | Dynamic             | 100-15                     | 4-16            | 86                                 |                   |                     | 4                 | F   | M   | No                          | I  | N                         | Plastic         | 1                   | 24.95                                     |  |
|                 | AP1200  | Dynamic             | 20-20                      | 4-16            | 90                                 |                   |                     | 6                 | F   | P   | No                          | S  | A                         | Fabric          | 3.3                 | 39.95                                     |  |
|                 | AP1300  | Dynamic             | 20-20                      | 4-16            | 108                                |                   |                     | 10                | F   | P   | No                          | S  | A                         | Vinyl           | 5.4                 | 49.95                                     |  |
|                 | AP1400  | Dynamic             | 20-22                      | 4-16            | 105                                |                   |                     | 10                | F   | P   | No                          | C  | A                         | Fabric          | 5.5                 | 59.95                                     |  |
|                 | ATH-909 | Dynamic             | 20-20                      | 4-16            | 100                                |                   |                     | 10                | F   | P   | No                          | O  | A                         | Fabric          | 6.9                 | 79.95                                     |  |
|                 | ATH-910 | Dynamic             | 20-20                      | 4-16            | 100                                |                   |                     | 10                | F   | P   | No                          | C  | A                         | Vinyl           | 7.2                 | 99.95                                     |  |
|                 |         |                     |                            |                 |                                    |                   |                     |                   |   |   |                             |  |                           |                 |                     | †Over-the-ear, earbud.                    |  |
| AZDEN           | OM-90   | Dynamic             | 4-26                       | 32              | 105                                | 800               | 0.2                 | 10                | F   | A   | S                           | A  | Vinyl                     |                 | 100.00              |   |  |
|                 | OM-70   | Dynamic             | 4-24                       | 32              | 103                                | 500               | 0.3                 | 10                | F   | A   | S                           | A  | Vinyl                     |                 | 80.00               |   |  |
|                 | DSR-18  | Dynamic             | 15-22                      | 60              | 103                                | 200               |                     | 10                | C   | A   | S                           | A  | Plastic                   |                 | 70.00               |   |  |
|                 | DSR-12  | Dynamic             | 20-20                      | 200             | 105                                | 100               |                     | 8                 | F   | P   | S                           | A  | Cloth                     |                 | 60.00               |   |  |
|                 | DSR-48  | Dynamic             | 15-24                      | 40              | 97                                 | 100               |                     | 8                 | F   | A   | O                           | A  | Foam                      |                 | 70.00               |   |  |
|                 | DSR-42  | Dynamic             | 20-20                      | 50              | 102                                | 100               |                     | 8                 | F   | M   | O                           | A  | Plastic                   |                 | 40.00               |   |  |
| BANG & OLUFSEN  | Form 1  | Dynamic             | 20-20                      | 35              | 94                                 |                   |                     | 10                | C   | M/A   | No                          | O  | A                         | Foam            | 6                   | 120.00                                    |  |
|                 | Form 2  | Dynamic             | 40-20                      | 30              | 94                                 |                   |                     | 10                | F   | M/A   | No                          | O  | A                         | Foam            | 2½                  | 60.00                                     |  |
| BEYERDYNAMIC    | DT48A   | Dynamic             | 16-20                      | 5               |                                    | 1V                |                     | 10                | F   |   | No                          | S  | A                         | Rubber          | 14                  | 320.00                                    |  |
|                 | DT48K   | Dynamic             | 16-20                      | †               |                                    | 4.4V              |                     | 10                | F   | P   | No                          | C  | A                         | Vinyl           | 14                  | 300.00                                    |  |
|                 | DT48WK  | Dynamic             | 16-20                      | †               |                                    | 4.4V              |                     | 5                 | C   | P   | No                          | C  | A                         | Vinyl           | 14                  | 315.00                                    |  |
|                 | DT96AK  | Dynamic             | 30-17                      | 50              |                                    | 12V               |                     | 10                | F   | P   | No                          | C  | A                         | Vinyl           | 4½                  | 140.00                                    |  |
|                 | DT96AWK | Dynamic             | 3-17                       | 50              |                                    | 12V               |                     | 5                 | C   | P   | No                          | C  | A                         | Vinyl           | 4½                  | 140.00                                    |  |
|                 | DT100K  | Dynamic             | 30-20                      | ††              |                                    | 20V               |                     | 10                | F   | P   | No                          | C  | A                         | Vinyl           | 12½                 | 172.00                                    |  |
|                 | DT100WK | Dynamic             | 30-20                      | ††              |                                    | 20V               |                     | 5                 | C   | P   | No                          | C  | A                         | Vinyl           | 12½                 | 172.00                                    |  |
|                 | DT102K  | Dynamic             | 30-20                      | ††              |                                    | 20V               |                     | 10                | F   | P   | No                          | C  | A                         | Vinyl           | 9                   | 119.00                                    |  |
|                 | DT102WK | Dynamic             | 30-20                      | ††              |                                    | 20V               |                     | 5                 | C   | P   | No                          | C  | A                         | Vinyl           | 9                   | 119.00                                    |  |
|                 | DT880   | Dynamic             | 5-25                       | 600             | 94                                 | 7.75V             | 0.5                 | 8                 | C   | P   | No                          | C/O  | A                         | Vinyl           | 7                   | 169.00                                    |  |
|                 | DT880ST | Dynamic             | 5-35                       | 600             | 94                                 | 7.75V             | 0.5                 | 8                 | C   | P   | No                          | C/O  | A                         | Vinyl           | 7                   | 229.00                                    |  |
|                 | DT990   | Dynamic             | 5-35                       | 600             | 96                                 | 7.75V             | 0.5                 | 8                 | C   | P   | No                          | C/O  | A                         | Terry           | 8                   | 209.00                                    |  |
|                 | DT770   | Dynamic             | 5-35                       | 600             | 96                                 | 7.75V             | 0.5                 | 8                 | C   | P   | No                          | C  | A                         | Vinyl           | 9                   | 189.00                                    |  |
|                 | DT550   | Dynamic             | 10-22                      | 600             | 95                                 | 7.75V             | 1.0                 | 8                 | C   | P   | No                          | C/O  | A                         | Vinyl           | 7                   | 145.00                                    |  |
|                 | DT220   | Dynamic             | 20-20                      | 400             | 102                                | 6.4V              | 1                   | 8                 | C   | P   | No                          | C  | A                         | Vinyl           | 9                   | 129.00                                    |  |
|                 | DT340TV | Dynamic             | 20-20                      | 50              | 108                                | 2.24V             |                     | 22                | F   | P   | Yes                         | C  | A                         | Vinyl           |                     | 85.00                                     |  |
| DT303TV         | Dynamic | 20-20               | 50                         | 112             | 2.24V                              |                   |                     | F                 | P   | Yes   | S                           |  | Foam                      | 2¾              | 69.00               |   |  |
| DT330MKII       | Dynamic | 15-18               | 40                         | 85              | 2V                                 | 1                 | 8                   | F                 | M/A   | No  | C/O                         | A  | Vinyl                     | 7               | 89.00               |   |  |
| DT320MKII       | Dynamic | 20-20               | 40                         | 88              | 7.75V                              | 1                 | 6                   | F                 | M/A   | No  | C/O                         | A  | Vinyl                     | 4               | 79.00               |   |  |
| DT325           | Dynamic | 20-20               | 40                         | 88              | 7.75V                              | 1                 | 3                   | F                 | M/A   | No  | C/O                         | A  | Foam                      | 4               | 65.00               |   |  |
| IRS690          | Dynamic | 20-20               | 600                        | 114             |                                    |                   |                     |                   | M   | Yes   |                             | A  | Fabric                    | 8               | 399.00              |   |  |
|                 |         |                     |                            |                 |                                    |                   |                     |                   |   |   |                             |  |                           |                 | Infrared, wireless. |   |  |
| BONDWELL        | BW-2800 |                     | 70-16                      | 5k              |                                    |                   | 0.4†                |                   | A   | Yes   | I                           | N  |                           |                 | 79.99               | Infrared, wireless. †At 1 kHz.            |  |
| DENON           | AH-D900 | Dynamic             | 3-31                       | 32              | 106                                | 6.2V              |                     | 10                | F   | M/A   | No                          | C  | A                         | Plastic         | 8                   | 140.00                                    |  |
|                 | AH-D700 | Dynamic             | 3-30                       | 32              | 106                                | 5.7V              |                     | 10                | F   | M/A   | No                          | C  | A                         | Plastic         | 8                   | 120.00                                    |  |
|                 | AH-D500 | Dynamic             | 4-28                       | 32              | 105                                | 5.1V              |                     | 10                | F   | M/A   | No                          | S  | A                         | Plastic         | 5.3                 | 80.00                                     |  |
|                 | AH-D300 | Dynamic             | 4-26                       | 32              | 105                                | 5.1V              |                     | 10                | F   | M/A   | No                          | S  | A                         | Plastic         | 5                   | 70.00                                     |  |
|                 | AH-D100 | Dynamic             |                            |                 |                                    |                   |                     |                   |   |   |                             |  |                           |                 |                     | 60.00                                     |  |
|                 | AH-C30  | Dynamic             | 18-22                      | 16              | 106                                | 700               |                     | 4                 | F   | M   | No                          | O/I  | N                         |                 | 0.2                 | 34.95                                     |  |
| AH-C6           | Dynamic | 16-22               | 16                         | 106             | 700                                |                   | 4                   | F                 | M   | No  | O/I                         | N  |                           | 0.2             | 24.95               |   |  |
| FOSTEX          | T-20    | RP                  | 50-30                      | 50              | 96                                 | 200               |                     | 8                 | F   | P   | No                          | C  | A                         | Vinyl           | 18                  | 89.00                                     |  |
|                 | T-40    | RP                  | 30-40                      | 50              | 98                                 | 200               |                     | 8                 | F   | P   | No                          | C  | A                         | Vinyl           | 18                  | 130.00                                    |  |
|                 | T-45    | RP                  | 30-40                      | 50              | 98                                 | 200               |                     | 8                 | F   | P   | No                          | C/O  | A                         | Vinyl           | 18                  | 230.00                                    |  |
|                 |         |                     |                            |                 |                                    |                   |                     |                   |   |   |                             |  |                           |                 |                     | One-sided with boom mike and routing box. |  |

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|----------------------|---------------|---------------------|----------------------------|-----------------|------------------------------------|-------------------|---------------------|-------------------|---|--|-----------------------------|--|---|---------------------------|---------------------|-------------------------|---|--|
| GC-THORSEN           | 90-102        | Dynamic             | 30-18                      | 8               | 90                                 | 2V                | 10                  | F                 | M/P   | No   | C                           | A  | Vinyl   | 12                        | 15.99               |                         |   |  |
|                      | 90-115        | Dynamic             | 20-20                      | 32              | 95                                 | 1.3V              | 3 1/2               | F                 | M/P   | No   | O                           | N  | Foam  | 0.17                      | 8.99                |                         |   |  |
|                      | 90-125        | Dynamic             | 20-20                      | 32              | 98                                 | 2V                | 6                   | F                 | M/P   | No   | O                           | A  | Plastic   | 1.13                      | 11.79               |                         |   |  |
|                      | 90-135        | Dynamic             | 20-20                      | 32              | 98                                 | 2V                | 6                   | F                 | M/P   | No   | O                           | A  | Foam  | 1.7                       | 7.99                |                         |   |  |
|                      | 90-150        | Dynamic             | 20-25                      | 100             | 100                                | 5.5V              | 6                   | F                 | M/P   | No   | C                           | A  | Leather   | 4.6                       | 26.99               |                         |   |  |
|                      | 90-130        | Dynamic             | 50-18                      | 32              | 90                                 | 2V                | 6                   | F                 | M/P   | No   | O                           | A  | Foam  | 1.7                       | 5.29                |                         |   |  |
| 90-133               | Dynamic       | 20-20               | 32                         | 98              | 2V                                 | 6                 | F                   | M/P               | No  | O  | A                           | Foam   | 1.7   | 2.99                      |                     |                         |   |  |
| JECKLIN              | JJ I          | Dynamic             | 35-20                      | 200             |                                    |                   | 10                  | F                 | P   | No   | O                           | F  | Plastic   | 14                        | 99.00               |                         |   |  |
|                      | JJ II         | Dynamic             | 30-20                      | 200             |                                    |                   | 10                  | F                 | P   | No   | O                           | F  | Plastic   | 14                        | 169.00              |                         |   |  |
|                      | ESC           | ES                  | 20-20                      | 4/16            |                                    |                   | 10                  | F                 | P   | No   | O                           | F  | Plastic   | 14                        | 650.00              |                         |   |  |
| JVC                  | HAC07         | Dynamic             | 15-22                      | 32              | 102                                | 100mW             | 9.8                 | F                 | P/A   | No   | C                           | A  | Foam  | 2                         | 39.95               |                         |   |  |
|                      | HAD300        | Dynamic             | 20-20                      | 32              | 97                                 |                   | 9.8                 | F                 | P/A   | No   | C                           | A  | Foam  | 3                         | 19.95               |                         |   |  |
|                      | HAD500        | Dynamic             | 10-23                      | 40              | 102                                | 100mW             | 9.8                 | F                 | P/A   | No   | C                           | A  | Vinyl   | 4                         | 39.95               |                         |   |  |
|                      | HAD600        | Dynamic             | 5-26                       | 32              | 106                                | 100mW             | 9.8                 | F                 | P/A   | No   | C                           | A  | Vinyl   | 4                         | 49.95               |                         |   |  |
|                      | HAD770        | Dynamic             | 5-25                       | 16              | 100                                | 100mW             | 9.8                 | F                 | P   | No   | C                           | A  | Vinyl   | 8                         | 119.95              |                         |   |  |
|                      | HAD990        | Dynamic             | 5-27                       | 65              | 106                                | 100mW             | 9.8                 | F                 | P   | No   | C                           | A  | Vinyl   | 9                         | 149.95              |                         |   |  |
| HASU7                | Dynamic       | 20-18               | 40                         | 100             |                                    | 16.4              | F                   | P/A               | No  | C  | A                           | Vinyl  | 6   | 90.00                     | For surround sound. |                         |   |  |
| KOSS                 | JCK300        | Dynamic             | 20-20                      |                 |                                    |                   |                     |                   |   | Yes  | C                           | A  | Vinyl   |                           | 274.95              |                         | Cordless.<br>As above.<br>†At 100 dB SPL.   |  |
|                      | JCK200        | Dynamic             | 20-20                      |                 |                                    |                   |                     |                   |   | No   | C                           | A  | Vinyl   | 10                        | 159.95              |                         |   |  |
|                      | PRO/450       | Dynamic             | 10-30                      | 100             | 102                                |                   | 0.5†                | 25                | C   | P/A  | No                          | C  | A   | Vinyl                     | 15                  | 174.95                  |   |  |
|                      | PRO/99        | Dynamic             | 10-20                      | 100             | 96                                 |                   | 0.5†                | 10                | C   | P/A  | No                          | C  | A   | Vinyl                     | 10                  | 99.95                   |   |  |
|                      | PRO/75        | Dynamic             | 10-20                      | 180             | 94                                 |                   | 0.5†                | 10                | C   | P/A  | No                          | C  | A   | Vinyl                     | 10.8                | 74.95                   |   |  |
|                      | PRO/4X Plus   | Dynamic             | 10-40                      | 100             | 100                                |                   | 0.5†                | 10                | C   | P/A  | No                          | C  | A   | Vinyl                     | 8.3                 | 90.00                   |   |  |
|                      | PRO/4AAA Plus | Dynamic             | 10-22                      | 100             | 100                                |                   | 0.75†               | 10                | C   | P/A  | No                          | C  | A   | Vinyl                     | 13                  | 70.00                   |   |  |
|                      | HV/1A Plus    | Dynamic             | 15-35                      | 140             | 95                                 |                   | 0.75†               | 10                | F   | P/A  | No                          | S/O  | A   | Foam                      | 9.3                 | 49.95                   |   |  |
|                      | K/40LC Plus   | Dynamic             | 10-22                      | 100             | 104                                |                   | 1.0†                | 10                | C   | P/A  | No                          | C  | A   | Vinyl                     | 6.7                 | 39.95                   |   |  |
|                      | K/6X Plus     | Dynamic             | 10-22                      | 100             | 104                                |                   | 1.0†                | 10                | C   | P/A  | No                          | C  | A   | Vinyl                     | 6.3                 | 31.95                   |   |  |
|                      | TNT/88        | Dynamic             | 15-30                      | 60              | 94.5                               |                   | 0.20†               | 10                | F   | P/A  | No                          | C  | A   | Vinyl                     | 5                   | 89.95                   |   |  |
|                      | TNT/77        | Dynamic             | 15-20                      | 60              | 91.5                               |                   | 0.20†               | 10                | F   | P/A  | No                          | S/O  | A   | Foam                      | 4.5                 | 69.95                   |   |  |
|                      | TNT/66        | Dynamic             | 15-20                      | 60              | 93.5                               |                   | 0.20†               | 10                | F   | P/A  | No                          | C  | A   | Vinyl                     | 3                   | 49.95                   |   |  |
|                      | Porta Pro     | Dynamic             | 15-25                      | 60              | 97                                 |                   | 0.20†               | 6                 | F   | P/A  | No                          | S/O  | A/F   | Foam                      | 2.3                 | 49.95                   |   |  |
|                      | Porta Pro Jr. | Dynamic             | 15-25                      | 60              | 97                                 |                   | 0.20†               | 4 1/2             | F   | P/A  | No                          | S/O  | A/F   | Foam                      | 2.3                 | 39.95                   |   |  |
|                      | PRO/4AA       | Dynamic             | 10-22                      | 230             | 94                                 |                   | 0.5†                | 10                | C   | P/A  | No                          | C  | A   | Vinyl                     | 22                  | 99.95                   |   |  |
|                      | TD/60         | Dynamic             | 18-20                      | 27              | 90                                 |                   | 0.5†                | 10                | F   | P/A  | No                          | C  | A   | Vinyl                     | 7.3                 | 19.99                   |   |  |
|                      | TD/50         | Dynamic             | 18-20                      | 100             | 93                                 |                   | 1.0†                | 10                | F   | P/A  | Yes                         | S/O  | A   | Foam                      | 3.5                 | 24.99                   |   |  |
|                      | TD/40         | Dynamic             | 20-20                      | 32              | 93                                 |                   | 1.0†                | 5 1/2             | F   | P/A  | Yes                         | S  | A   | Vinyl                     | 2.35                | 19.99                   |   |  |
|                      | TD/30         | Dynamic             | 20-20                      | 32              | 91                                 |                   | 1.0†                | 4 1/2             | F   | P/A  | No                          | S  | A   | Vinyl                     | 1.9                 | 15.99                   |   |  |
|                      | TD/20         | Dynamic             | 20-20                      | 32              | 94                                 |                   | 1.5†                | 3 1/2             | F   | P/A  | No                          | S/O  | A   | Foam                      | 2                   | 9.99                    |   |  |
|                      | CS/2          | Dynamic             | 20-20                      | 32              | 98                                 |                   | 1.0†                | 3                 | F   | M/A  | No                          | I  | N   |                           | 0.43                | 29.99                   |   |  |
|                      | CS/1          | Dynamic             | 20-20                      | 32              | 98                                 |                   | 1.0†                | 3                 | F   | M/A  | No                          | I  | N   |                           | 0.43                | 29.99                   |   |  |
|                      | CR/9          | Dynamic             | 20-20                      | 32              | 98                                 |                   | 1.0†                | 3                 | F   | M/A  | Yes                         | I  | A/F   | Foam                      | 0.67                | 19.99                   |   |  |
|                      | CR/8          | Dynamic             | 20-20                      | 32              | 98                                 |                   | 1.0†                | 3                 | F   | M/A  | No                          | I  | A   |                           | 0.72                | 14.99                   |   |  |
|                      | CR/7          | Dynamic             | 20-20                      | 32              | 98                                 |                   | 1.0†                | 3                 | F   | M/A  | No                          | I  | N/A   |                           | 0.75                | 14.99                   |   |  |
|                      | CR/6          | Dynamic             | 20-20                      | 32              | 98                                 |                   | 1.0†                | 3                 | F   | M  | No                          | I  | N   |                           | 0.43                | 11.99                   |   |  |
| MB QUART ELECTRONICS | QuartPhone 15 | Dynamic             | 20-20                      | 100             | 98                                 | 100mW             | 10                  | F                 | P/A   | No   | C                           | C  |   | Vinyl                     | 2                   |                         |   |  |
|                      | QuartPhone 30 | Dynamic             | 10-22                      | 240             | 94                                 | 100mW             | 10                  | F                 | P   | No   | C                           | C  |   | Vinyl                     | 8.5                 |                         |   |  |
|                      | QuartPhone 50 | Dynamic             | 10-22                      | 240             | 96                                 | 100mW             | 10                  | C                 | P   | No   | C                           | C  |   | Vinyl                     | 8.6                 |                         |   |  |
|                      | QuartPhone 70 | Dynamic             | 5-22                       | 240             | 96                                 | 100mW             | 10                  | C                 | P   | No   | C                           | C  |   | Vinyl                     | 8.6                 |                         |   |  |
|                      | QuartPhone 85 | Dynamic             | 10-22                      | 600             | 92                                 | 100mW             | 10                  | C                 | P   | No   | D                           | A  |   | Vinyl                     | 7                   |                         |   |  |
| QuartPhone 95        | Dynamic       | 15-27               | 240                        | 92              | 100mW                              | 10                | C                   | P                 | No  | C  | C                           |  | Vinyl   | 9                         |                     |                         |   |  |
| MEMOREX              | SLS-9         | Dynamic             | 20-20                      | 32              | 96                                 | 1.8V              | 1                   | 8                 | F   | A  | No                          | C  | A   | Plastic                   | 4                   |                         |   |  |
|                      | EDM-110       | Dynamic             | 5-25                       | 25              | 100                                | 1.6V              | 3                   | 9                 | F   | A  | No                          | O  | A   | Plastic                   | 6                   |                         |   |  |
|                      | EDM-330       | Dynamic             | 15-22                      | 40              | 102                                | 2.8V              | 3                   | 7                 | C   | A  | No                          | S  | A   |                           | 9                   |                         |   |  |
|                      | EDM-550       | Dynamic             | 5-25                       | 60              | 102                                | 2.5V              | 3                   | 6                 | C   | A  | No                          | S  | A   | ABS Plastic               | 8                   |                         |   |  |
|                      | EDM-770       | Dynamic             | 5-30                       | 70              | 107                                | 2.6V              | 3                   | 8                 | F   | A  | No                          | C  | A   | ABS Plastic               | 7                   |                         |   |  |
| PSS-100              | Dynamic       | 5-25                | 25                         | 104             | 1.6V                               | 3                 | 20                  | F                 | P   | No   | C                           | A  | ABS Plastic   | 8                         |                     |                         |   |  |
| NAKAMICHI            | SP-7          | Dynamic             | 20-20                      | 45              | 98                                 | 100               | 10                  | F                 | P   | No   | O                           | A  | Foam  | 4.8                       | 100.00              | Includes extra earpads. |   |  |
| ORA ELECTRONICS      | GH16RP        | ES                  | 20-22                      | 32              | 105                                | 40mW              | 3.6                 | F                 | M   | No   | I                           | N  | Foam  | 0.4                       | 4.99                |                         |   |  |
|                      | GHT100        | ES                  | 12-24                      | 32              | 105                                | 40mW              | 3.6                 | F                 | M   | No   | I                           | N  | Foam  | 0.4                       | 9.99                |                         |   |  |
|                      | GHT11         | ES                  | 40-20                      | 32              |                                    |                   | 3.6                 | F                 | P   | No   | C                           | A  | Foam  | 1.5                       | 5.99                |                         |   |  |
| PANASONIC            | EAH-X250      | Dynamic             | 2-30                       | 55              | 106                                | 1W                | 9.8                 | F                 | M/A   | No   | C                           | A  | Plastic   | 10.6                      | 179.95              |                         |   |  |
|                      | EAH-X150      | Dynamic             | 5-35                       | 63              | 107                                | 1W                | 9.8                 | F                 | M/A   | No   | C                           | A  | Plastic   | 4.8                       | 129.95              |                         |   |  |
|                      | EAH-X120      | Dynamic             | 8-33                       | 45              | 107                                | 1W                | 9.8                 | F                 | M/A   | No   | C                           | A  | Plastic   | 4.6                       | 94.95               |                         |   |  |
|                      | EAH-X80       | Dynamic             | 8-30                       | 45              | 105                                | 500mW             | 9.8                 | F                 | M/A   | No   | C                           | A  | Plastic   | 3.9                       | 54.95               |                         |   |  |
|                      | EAH-Z9        | Dynamic             | 30-20                      | 16              | 102                                | 40mW              | 3.6                 | F                 | M   | No   | I                           | A  |   | 0.7                       | 17.95               |                         |   |  |
|                      | EAH-S24       | Dynamic             | 20-20                      | 32              | 100                                | 100mW             | 4                   | F                 | M/A   | No   | O                           | A  |   | 1.5                       | 19.95               |                         |   |  |
| EAH-S14              | Dynamic       | 30-20               | 32                         | 98              | 100mW                              | 4                 | F                   | M/A               | No  | O  | A                           |  | 1.3   | 12.95                     |                     |                         |   |  |
| PICKERING            | CD-5          | Dynamic             | 20-20                      | 35              | 100                                | 100mW             | 0.5                 | 7 1/2             | C   | P  | No                          | O  | A   | Foam                      | 8.8                 | 79.95                   | Mono/stereo switch.<br><br>Two speakers per earpad.<br>Includes extra set of ear cushions.<br>As above. |  |
|                      | CD-4          | Dynamic             | 20-20                      | 32              | 105                                | 100mW             | 0.5                 | 7 1/2             | C   | P  | No                          | O  | A   | Foam                      | 3                   | 66.00                   |   |  |
|                      | CD-2          | Dynamic             | 20-20                      | 32              | 112                                | 100mW             | 0.5                 | 7 1/2             | C   | P  | No                          | O  | A   | Vinyl                     | 5                   | 50.00                   |   |  |
|                      | CD-1          | Dynamic             | 20-20                      | 32              | 105                                | 100mW             | 0.5                 | 7                 | F   | M/P  | No                          | O  | A   | Vinyl                     | 2.5                 | 35.00                   |   |  |
|                      | F-108         | Dynamic             | 20-20                      | 18              | 105                                | 50mW              | 0.5                 | 5                 | F   | M/P  | Yes                         | D  | A   |                           | 0.5                 | 45.00                   |   |  |
|                      | F-104         | Dynamic             | 20-20                      | 32              | 98                                 | 50mW              | 0.5                 | 4                 | F   | M  | No                          | O  | A   | Foam                      | 0.5                 | 30.00                   |   |  |
|                      | F-102         | Dynamic             | 20-20                      | 32              | 92                                 | 50mW              | 0.5                 | 5                 | F   | M  | No                          | O  | A   | Foam                      | 1.1                 | 25.00                   |   |  |
|                      | 2 + 2         | Dynamic             | 10-25                      | 35              | 106                                | 50mW              | 0.5                 | 4                 | C   | M/P  | No                          | O  | N   | Foam                      | 0.42                | 60.00                   |   |  |
|                      | PC-100        | Dynamic             | 20-18                      | 35              | 100                                | 50mW              | 0.5                 | 4                 | C   | M/P  | No                          | O  | N   | Foam                      | 0.21                | 20.00                   |   |  |
|                      | PC-60         | Dynamic             | 20-15                      | 35              | 90                                 | 50mW              | 0.5                 | 4                 | C   | M  | No                          | O  | N   | Foam                      | 0.21                | 15.95                   |   |  |
|                      | OA-44         | Dynamic             | 20-18                      | 32              | 90                                 | 100mW             | 0.5                 | 4                 | C   | M  | No                          | O  | A   | Foam                      | 1.1                 | 3.95                    |   |  |
| PIONEER              | SE-72         | Dynamic             | 3-28                       | 32              | 135                                | 1.5W              | 16.5                | F                 | M/P/A                                       | No   | S                           | A  | Foam  | 4.8                       | 75.00               |                         |   |  |
|                      | SE-52         | Dynamic             | 10-25                      | 40              | 100                                | 150mW             | 8.8                 | F                 | M/P/A                                       | No   | O                           | A  | Vinyl   | 3.7                       | 45.00               |                         |   |  |
|                      | SE-32         | Dynamic             | 12-22                      | 40              | 96                                 | 100mW             | 8.2                 | F                 | M/P/A                                       | No   | O                           | A  | Vinyl   | 3.3                       | 35.00               |                         |   |  |
|                      | SE-M90        | Dynamic             | 3-50                       | 32              |                                    | 1W                | 16 1/2              | F                 | A   |  | C                           | A  |   | 9                         | 125.00              |                         |   |  |
|                      | SE-M70        | Dynamic             | 3-50                       | 32              |                                    | 1W                | 16 1/2              | F                 | A   |  | C                           | A  |   | 9                         | 100.00              |                         |   |  |
|                      | SE-M50        | Dynamic             | 3-50                       | 32              |                                    | 1W                | 16 1/2              | F                 | A   |  | C                           | A  |   | 8.1                       | 70.00               |                         |   |  |
|                      | SE-205        | Dynamic             | 20-20                      | 10              |                                    | 500mW             | 8 1/2               | F                 | P   |  | C                           | A  |   | 16                        | 45.00               |                         |   |  |





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| MANUFACTURER          | Model                | Operating Principle | Frequency Range, Hz to kHz |       | Impedance, Ohms | Sensitivity, dB SPL for 1 mW Input | Maximum Input, mV | THD at 95 dB SPL, % | Cord Length, Feet | Cord Style: Flat = F, Coiled = C, Round = R | Plug Type: 3.5-mm Mini = M, 1/4" Phone = P, Adaptor Included = A | Individual Volume Controls? | Circumaural = A, Supra-aural = S, Over-Ear Design = O, In-Ear = I, Adjustable = A, Folding = N | Cover Material on Ear Cup | Weight, Ounces | Price, \$                                | Notes                                  |                                   |
|-----------------------|----------------------|---------------------|----------------------------|-------|-----------------|------------------------------------|-------------------|---------------------|-------------------|---|--|-----------------------------|--|---------------------------|----------------|--|--|-----------------------------------|
| RECOTON               | ST101                | Dynamic             | 20-20                      | 32    | 98              | 0.1W                               |                   | 6                   | F                 | M/A   | Yes  | S                           | A/F  | Foam                      | 1.25           | 19.99                                    |  |                                   |
|                       | ST103                | Dynamic             | 30-20                      | 32    | 98              | 0.1W                               |                   | 4                   | F                 | M/A   | No   | S                           | A  | Foam                      | 0.9            | 13.99                                    |  |                                   |
|                       | ST104                | Dynamic             | 20-22                      | 32    | 98              | 0.1W                               |                   | 25                  | F                 | M/A   | Yes  | O                           | A/F  | Foam                      | 1.5            | 24.99                                    |  |                                   |
|                       | ST105                | Dynamic             | 20-20                      | 32    | 100             | 0.1W                               |                   | 4                   | F                 | M/A   | No   | S                           | A/F  | Foam                      | 1.5            | 24.99                                    |  |                                   |
|                       | ST106                | Dynamic             | 20-22                      | 32    | 100             | 0.1W                               |                   | 4                   | F                 | M   | No   | S                           | A/F  | Foam                      | 1.02           | 13.99                                    |  |                                   |
|                       | ST107                | Dynamic             | 20-23                      | 40    | 102             | 0.1W                               |                   | 6                   | C                 | P/A   | No   | C                           | A  | Foam                      | 3.88           | 39.99                                    |  |                                   |
|                       | ST108                | Dynamic             | 50-22                      | 32    | 98              | 0.1W                               |                   | 3                   | F                 | M   | No   | I                           | N  | Foam                      | 1.8            | 9.49                                     |  |                                   |
|                       | ST109                | Dynamic             | 20-20                      | 32    | 98              | 0.3W                               |                   | 4                   | F                 | M   | No   | C                           | A  | Foam                      | 1.13           | 22.99                                    |  |                                   |
|                       | ST82                 | Dynamic             | 20-20                      | 32    | 90              | 0.1W                               |                   | 4                   | F                 | M   | No   | S                           | A  | Foam                      | 1.41           | 8.99                                     |  |                                   |
|                       | ST92                 | Dynamic             | 20-20                      | 32    | 90              | 0.1W                               |                   | 4                   | F                 | M   | No   | S                           | A  | Foam                      | 1.41           | 8.99                                     |  |                                   |
|                       | ST77                 | Dynamic             | 20-25                      | 25    | 96              | 50mW                               |                   | 7                   | F                 | M/A   | No   | S                           | A  | Foam                      | 1.23           | 15.99                                    |  |                                   |
|                       | ST93                 | Dynamic             | 20-22                      | 32    | 90              | 0.1W                               |                   | 5                   | F                 | M/A   | No   | S                           | A  | Foam                      | 1.02           | 11.69                                    |  |                                   |
|                       | ST97                 | Dynamic             | 20-23                      | 35    | 100             | 0.3W                               |                   | 6                   | F                 | M/A   | No   | C                           | A  | Foam                      | 2.8            | 31.99                                    |  |                                   |
|                       | ST98A                | Dynamic             | 50-22                      | 32    | 102             | 0.1W                               |                   | 6                   | F                 | M   | No   | I                           | A/F  | Foam                      | 1.8            | 13.99                                    |  |                                   |
| ST100                 | Dynamic              | 20-20               | 38                         | 98    | 0.1W            |                                    | 4                 | F                   | M                 | No  | I  | N                           | Foam   | 0.53                      | 20.99          |  |  |                                   |
| SANSUI                | SS-L55               | Dynamic             | 20-20                      | 100   | 98              | 97                                 | 1V                | 6                   | F                 | P   | No   | C                           | A  | Plastic                   | 7 1/2          | 55.00                                    |  |                                   |
|                       | SS-L33               | Dynamic             | 30-20                      | 60    | 97              | 550                                |                   | 6                   | F                 | P   | No   | C                           | A  | Plastic                   | 5 1/2          | 35.00                                    |  |                                   |
| SENNHEISER            | HD30                 | Dynamic             | 50-17                      | 32    | 96              |                                    | 1.3               | 4                   | F                 | M/A   | Opt.   | S/O                         | A  | Foam                      | 1.5            | 39.00                                    |  |                                   |
|                       | PD100                | Dynamic             | 20-18                      | 42    | 94              |                                    | 1.0               | 4                   | F                 | M/A   | Opt.   | S/O                         | A  | Foam                      | 1.4            | 59.00                                    |  |                                   |
|                       | HD50                 | Dynamic             | 20-20                      | 42    | 94              |                                    | 1                 | 4                   | F                 | M/A   | Opt.   | S/O                         | A  | Foam                      | 1.4            | 79.00                                    |  |                                   |
|                       | HD450                | Dynamic             | 20-20                      | 70    | 94              |                                    | 1                 | 10                  | F                 | M/A   | Opt.   | S/O                         | A  | Foam                      | 4.8            | 79.00                                    |  |                                   |
|                       | HD480                | Dynamic             | 18-22                      | 70    | 94              |                                    | 1                 | 10                  | F                 | M/A   | Opt.   | S/O                         | A  | Foam                      | 4.8            | 99.00                                    |  |                                   |
|                       | HD520                | Dynamic             | 18-22                      | 600   | 94              |                                    | 0.3               | 10                  | F                 | P   | Opt.   | C/O                         | A  | Vinyl                     | 7.5            | 149.00                                   |  |                                   |
|                       | HD540                | Dynamic             | 16-25                      | 600   | 94              |                                    | 0.4               | 10                  | F                 | P   | Opt.   | C/O                         | A  | Vinyl                     | 8.8            | 199.00                                   |  |                                   |
|                       | Reference            | Dynamic             | 10-25                      | 600   | 94              |                                    | 0.2               | 10                  | F                 | P   | Opt.   | C                           | A  | Vinyl                     | 8.8            | 199.00                                   |  |                                   |
|                       | HD250                | Dynamic             | 16-25                      | 600   | 94              |                                    | 0.4               | 10                  | F                 | P   | Opt.   | C/O                         | A  | Vinyl                     | 8.8            | 349.00                                   | Matched elements.                      |                                   |
|                       | HD540 Reference Gold | Dynamic             | 16-25                      | 600   | 94              |                                    | 0.4               | 10                  | F                 | P   | Opt.   | C/O                         | A  | Vinyl                     | 8.8            | 349.00                                   |  |                                   |
| SIGNET                | TK44                 | ES                  | 10-25                      |       | 98              |                                    | 0.3†              | 10 1/2              | F                 | Spec.                                       | No   | C                           | A  | Vinyl                     | 8              | 300.00                                   | †At 110 dB SPL.                        |                                   |
|                       | EP700                | Dynamic             | 20-23                      | 32    | 92              |                                    | 10                | F                   | P                 | No  | C  | A                           | Cloth  | 8                         | 150.00         |  |  |                                   |
|                       | EP500                | Dynamic             | 20-22                      | 32    | 92              |                                    | 10                | F                   | P                 | No  | C  | A                           | Vinyl  | 8                         | 125.00         |  |  |                                   |
|                       | EP400                | Dynamic             | 20-22                      | 40    | 92              |                                    | 10                | F                   | P                 | No  | S  | A                           | Cloth  | 5                         | 100.00         |  |  |                                   |
|                       | EP350                | Dynamic             | 20-25                      | 32    | 110             |                                    | 10                | F                   | M/A               | Yes   | S  | A                           | Vinyl  | 6                         | 80.00          |  |  |                                   |
|                       | EP300                | Dynamic             | 20-22                      | 40    | 112             |                                    | 10                | F                   | P/A               | No  | S  | A                           | Cloth  | 6                         | 55.00          |  |  |                                   |
|                       | EP100                | Dynamic             | 20-20                      | 32    | 105             |                                    | 10                | F                   | M/A               | No  | O  | A                           | Cloth  | 1.7                       | 30.00          |  |  |                                   |
| SONY                  | MDR-CD999            | Dynamic             | 3-30                       | 45    | 106             | 1.2V                               | 10                | F                   | M/P/A             | No  | C  | A                           | Foam   | 10                        | 250.00         |  |  |                                   |
|                       | MDR-CD777            | Dynamic             | 5-30                       | 63    | 106             | 1V                                 | 10                | F                   | M/P/A             | No  | S  | A                           | Foam   | 7.8                       | 180.00         |  |  |                                   |
|                       | MDR-C0555            | Dynamic             | 5-27                       | 45    | 106             | 1V                                 | 10                | F                   | M/P/A             | No  | S  | A                           | Foam   | 7.5                       | 150.00         |  |  |                                   |
|                       | MDR-IF5K             | Dynamic             | 18-22                      |       | 106             | 1V                                 | 9.8               | F                   | M/P/A             | Yes   | O  | A                           | Foam   | 3.5                       | 200.00         | Infrared, cordless.                      |  |                                   |
|                       | MDR-V6               | Dynamic             | 5-30                       | 63    | 106             | 1V                                 | 9.8               | F                   | M/P/A             | No  | C  | A                           | Foam   | 7.8                       | 100.00         |  |  |                                   |
|                       | MDR-V4               | Dynamic             | 10-25                      | 45    | 104             | 500                                | 9.8               | F                   | M/P/A             | No  | S  | A/F                         | Foam   | 5.4                       | 80.00          |  |  |                                   |
|                       | MDR-V2               | Dynamic             | 16-22                      | 45    | 102             | 500                                | 6.5               | F                   | M/P/A             | No  | S  | A                           | Foam   | 5.1                       | 50.00          |  |  |                                   |
| STANTON               | SRS-265              | Dynamic             | 5-22                       | 100   | 96              | 100mW                              | 0.5               | 10                  | F                 | P   | No   | O                           | A  | Vinyl                     | 8.6            | 135.00                                   |  |                                   |
|                       | SRS-245              | Dynamic             | 10-22                      | 100   | 94              | 100mW                              | 0.5               | 10                  | F                 | P   | No   | O                           | A  | Vinyl                     | 8.5            | 110.00                                   |  |                                   |
|                       | SRS-225              | Dynamic             | 10-22                      | 100   | 94              | 100mW                              | 0.5               | 10                  | F                 | P   | No   | O                           | A  | Vinyl                     | 8.5            | 80.00                                    |  |                                   |
|                       | SRS-215              | Dynamic             | 20-20                      | 50    | 98              | 100mW                              | 0.5               | 10                  | F                 | M/P   | No   | O                           | A  | Vinyl                     | 2.1            | 60.00                                    |  |                                   |
|                       | ST-1                 | Dynamic             | 25-20                      | 32    | 110             | 100mW                              | 0.5               | 7 1/2               | F                 | M   | No   | O                           | A  | Foam                      | 3.2            | 24.95                                    |  |                                   |
|                       | ST-3.5               | Dynamic             | 20-20                      | 35    | 103             | 100mW                              | 0.5               | 7 1/2               | F                 | P   | No   | O                           | A  | Foam                      | 8.8            | 39.95                                    |  |                                   |
|                       | ST-2                 | Dynamic             | 20-22                      | 32    | 100             | 100mW                              | 0.5               | 7 1/2               | F                 | P   | No   | O                           | A  | Vinyl                     | 5              | 29.95                                    |  |                                   |
|                       | ST-5                 | Dynamic             | 20-20                      | 35    | 100             | 100mW                              | 0.5               | 7 1/2               | C                 | P   | No   | C                           | A  | Foam                      | 8.8            | 69.95                                    |  |                                   |
|                       | ST-10                | Dynamic             | 10-20                      | 50    | 98              | 100mW                              | 0.5               | 7                   | F                 | M/P   | No   | C                           | A  | Vinyl                     | 9.3            | 110.00                                   |  |                                   |
|                       | ST-Surround          | Dynamic             | 20-20                      | 32    | 103             | 100mW                              | 0.5               | 7 1/2               | C                 | P   | No   | O                           | A  | Foam                      | 9.8            | 69.95                                    |  |                                   |
|                       | LS-1                 | Dynamic             | 20-20                      | 32    | 92              | 100mW                              | 0.5               | 5                   | F                 | M/P   | No   | O                           | A  | Foam                      | 1              | 34.95                                    |  |                                   |
|                       | LS-2                 | Dynamic             | 20-20                      | 32    | 100             | 100mW                              | 0.5               | 5                   | F                 | M/P   | No   | O                           | A  | Foam                      | 1              | 24.95                                    |  |                                   |
|                       | LS-3 Turbo           | Dynamic             | 20-20                      | 18    | 105             | 100mW                              | 0.5               | 5                   | F                 | M/P   | No   | O                           | N  | Foam                      | 0.5            | 29.95                                    |  |                                   |
|                       | LS-4                 | Dynamic             | 20-20                      | 32    | 102             | 50mW                               | 0.5               | 3                   | F                 | M/P   | No   | O                           | N  | Foam                      | 0.25           | 34.95                                    |  |                                   |
|                       | 30M/SR               | Dynamic             | 20-22                      | 100   | 110             | 250mW                              | 0.25              | 12                  | C                 | P   | No   | N                           | Foam   | 3.8                       | 49.95          |  |  |                                   |
|                       | 35M/HB               | Dynamic             | 20-22                      | 100   | 110             | 250mW                              | 0.25              | 12                  | C                 | P   | No   | A                           | Foam   | 3.8                       | 55.00          |  |  |                                   |
|                       | 45M/MC               | Dynamic             | 20-18                      | 400   | 96              | 500mW                              | 0.25              | 12                  | F                 | (2)P  | No   | C                           | A  | Vinyl                     | 7              | 125.00                                   | Includes unidirectional mike.          |                                   |
|                       | STAX                 | SR-34 Pro           | ES                         | 20-25 | 8               | 95                                 |                   | 0.02                | 7                 | F   | A  | No                          | C/O  | A                         | Vinyl          | 8  | 199.95                                 | Includes Model SRD-4 Pro adaptor. |
|                       |                      | SR-84 Pro           | ES                         | 20-25 | 8               | 95                                 |                   | 0.02                | 7                 | F   | A  | No                          | C/O  | A                         | Vinyl          | 7.5                                      | 299.95                                 | As above.                         |
| SR-5NB                |                      | ES                  | 15-25                      | 8     | 97              |                                    | 0.05              | 7                   | F                 | A   | No   | C/O                         | A  | Vinyl                     | 13             | 349.95                                   | Includes Model SRD-6SB adaptor.        |                                   |
| SR-Gamma              |                      | ES                  | 10-35                      | 8     | 97              |                                    | 0.05              | 7                   | F                 | A   | No   | C/O                         | A  | Vinyl                     | 7.5            | 399.95                                   | As above.                              |                                   |
| SR-Gamma Pro          |                      | ES                  | 10-35                      | 8     | 100             |                                    | 0.005             | 7                   | F                 | A   | No   | C/O                         | A  | Vinyl                     | 7.5            | 699.95                                   | Includes Model SRD-7 Pro adaptor.      |                                   |
| SR-Lambda             |                      | ES                  | 8-35                       | 8     | 102             |                                    | 0.005             | 7                   | F                 | A   | No   | C/O                         | A  | Vinyl                     | 15.1           | 599.95                                   | Includes Model SRD-7SB adaptor.        |                                   |
| SR-Lambda Pro #1      |                      | ES                  | 8-35                       | 8     | 108             |                                    | 0.005             | 7                   | F                 | A   | No   | C/O                         | A  | Vinyl                     | 15.1           | 749.95                                   | Includes Model SRD-7 Pro adaptor.      |                                   |
| SR-Lambda Pro #2      |                      | ES                  | 8-35                       | 12.5k | 108             |                                    | 0.005             | 7                   | F                 | A   | Yes  | C/O                         | A  | Vinyl                     | 15.1           | 799.95                                   | Includes Model SRD-P portable adaptor. |                                   |
| SR-Lambda Pro #3      | ES                   | 8-35                | 50k                        | 108   |                 | 0.005                              | 7                 | F                   | A                 | No  | C/O  | A                           | Vinyl  | 15.1                      | 1199.95        | Includes Model SRM-1MK2 Pro Class-A amp. |  |                                   |
| SR-Lambda Signature   | ES                   | 8-35                | 50k                        | 108   |                 | 0.001                              | 7                 | F                   | A                 | No  | C/O  | A                           | Vinyl  | 15.1                      | 1999.95        | Includes Model SRM-T1 tube amp.          |  |                                   |
| STERLING STEREOPHONES | TE400                | Dynamic             | 20-30                      | 40    |                 |                                    | 10                | C                   | P                 | Yes   | C  | A                           | Vinyl  | 9                         | 69.95          | Titanium elements.                       |  |                                   |
|                       | TE200                | Dynamic             | 20-20                      | 40    |                 |                                    | 10                | C                   | P                 | Yes   | O  | A                           | Cloth  | 8                         | 59.95          | As above.                                |  |                                   |
|                       | TE100                | Dynamic             | 15-18                      | 40    |                 |                                    | 10                | F                   | P                 | No  | C  | A                           | Vinyl  | 9                         | 49.95          | As above.                                |  |                                   |
|                       | LM90                 | Dynamic             | 18-20                      | 32    |                 |                                    | 10                | F                   | P                 | Yes   | C  | A                           | Cloth  | 9                         | 29.95          |  |  |                                   |
|                       | LM60                 | Dynamic             | 18-20                      | 32    |                 |                                    | 10                | F                   | P                 | No  | O  | A                           | Cloth  | 8                         | 24.95          |  |  |                                   |
| TECHNICS              | EAH-X15              | Dynamic             | 15-20                      | 40    | 105             | 400                                | 0.01              | 6 1/2               | F                 | M/P/A                                       | No   | S                           | A  | Foam                      | 1 1/4          | 119.00                                   |  |                                   |
|                       | EAH-T6               | Dynamic             | 20-20                      | 40    | 98              | 100                                |                   | 4 1/2               | F                 | M/P/A                                       | No   | O                           | A  | Foam                      | 1 1/4          | 39.00                                    |  |                                   |
| YAMAHA                | YHD-1                | Orthodyn.           | 20-20                      | 45    | 100             | 1W                                 | 8                 | F                   | P/A               | No  | O  | A/F                         | Screen   | 5.1                       | 80.00          |  |  |                                   |
|                       | YHD-2                | Orthodyn.           | 20-20                      | 125   | 97              | 700mW                              | 8                 | F                   | P/A               | No  | O  | A/F                         | Screen   | 4.7                       | 60.00          |  |  |                                   |
|                       | YHD-3                | Orthodyn.           | 20-20                      | 125   | 97              | 500mW                              | 8                 | F                   | P/A               | No  | O  | A/F                         | Screen   | 4.2                       | 40.00          |  |  |                                   |

# Evolve to Electrostatics.

STAX would like to introduce you to the world's finest earspeakers, the STAX electrostatics.

The STAX reputation for incredible sound derives from decades of commitment to refining the electrostatic principle, which claims many advantages over conventional technology. The film diaphragm which replaces an electromagnetic driver is so light that it can respond accurately and instantaneously to the tiniest signal fluctuations. Electrostatics are free from magnetic hysteresis distortion, since the system contains no magnets or voice coils. The electrostatic drive unit ensures uniform excursion over the entire diaphragm surface, eliminating the partial vibration and cone breakup of dynamic headphones.

Recently refined, the STAX SR-84 Professional

accommodates every audiophile's needs . . . offering the precise, transparent, and natural sound of an electrostatic system at an extremely affordable price.

The Professional designation refers to the new ultra-low-mass diaphragm, a mere 4 microns thick. Just connect the companion adaptor between your amplifier or receiver, and your speakers, select the earspeaker mode, and enjoy sound unequalled by most any loudspeaker system.

STAX's entry-level earspeaker is the model SR-34 Professional, which features the same improvements found in the new SR-84 Pro. Clearly, our least-expensive system opens up a whole new world of musical enjoyment to the music lover on a budget.

As with their sound, STAX earspeakers have earned a reputation for reliability and customer loyalty which is the envy of the audio industry.

Treat yourself to an audition of a pair of STAX Professionals. Like so many STAX owners, what you once considered an accessory might well become a necessity.

## Where to buy STAX Earspeakers:

**AK** Pyramid Audio, Anchorage • **AL** Audition, Birmingham • **AZ** Hi Fi Sales, Mesa • **CA** Absolute Audio, Adray Mart, Orange • Audible Difference, Palo Alto • Audio By Design, Newport Beach • Beverly Hills Audio, Beverly Hills • Century Stereo, San Jose • Dimensions in Stereo, Torrance • Lasers Edge, Burbank, Woodland Hills • GNP Audio Video, Pasadena • Paris Audio, Los Angeles, Woodland Hills • Performance Audio, San Francisco • Sound Goods, Mountain View • Sound Quest, Irvine • Sounding Board, Berkeley • Stereo Plus, San Francisco • The PX Audio/Video, Huntington Beach • **CO** Listen Up, Denver • **CT** Carston Stereo, Danbury • Take 5 Audio, New Haven • **DE** Bryn Mawr Stereo, Wilmington • **FL** Audio By Caruso, Miami • Audio Center, Fort Lauderdale • Exotic Sound, Miami • Sound Ideas, Gainesville • **GA** Hi Fi Buys, Smyrna • **IA** Audio Labs, Des Moines • **ID** Stereo Shoppe, Boise • **IL** Audio Consultants, Evanston • **MA** Q Audio, Cambridge • **MD** Absolutely Sound, Rockville • J. S. Audio, Burtonsville • The Gramophone, Ellicott City, Lutherville • **MI** Almas HiFi, Dearborn, Farmington Hills • Audio Advisor, Inc., Classic Stereo, Grand Rapids • Court Street Listening Room, Saginaw • HiFi Buys, Ann Arbor, Lansing • The Gramophone, Birmingham • **MN** Audio Perfection, Minneapolis • **MO** Best Sound, St. Louis • **NC** Higher Fidelity, Pineville • Sound Systems, Fayetteville • **NH** R. E. Sound/Cookin, Nashua • **NJ** Bryn Mawr Stereo, Maple Shade • CSA Audio, Upper Merion • Harvey Electronics,

Leonard Radio, Paramus • Pro Audio Consultants, Chester, Millburn • Sound City, Kinnelon • Woodbridge Stereo, Princeton, Woodbridge • **NY** Altair Audio, Albany • Audio Breakthroughs, Huntington Station, Manhasset, Manhattan • Audio Den, Lake Grove • Avtronics, Hicksville • Clark Music, Latham, Syracuse • Continental Sound, Rego Park • Designatron's Stereo Store, Port Jefferson Station • Ear Drum, Manuet • Electronic Workshop, New York • Grand Central Radio, New York • Harvey Electronics, New York, Westbury, White Plains • Innovative Audio, Brooklyn • JSG Audio, Binghamton • Leonard Radio, Woodside, New York • Listening Room, Scarsdale • Longplayer Stereo, Goshin • Lyric Hi Fi, Park Avenue Audio, Sound By Singer, New York • Sound Stage, Fresh Meadows, Woodside • Stereo Exchange, New York • The Sound Mill, Mount Kisco • **OR** Audio Unlimited, La Grande • **PA** Bryn Mawr Stereo, Bryn Mawr, Camp Hill, Frazer, Harrisburg, Jenkintown, King of Prussia, Langhorne, Montgomeryville, Philadelphia, Quakertown, Whitehall • David Mann Audio, Philadelphia • Sassafra Audio, Bryn Mawr, Feasterville, Montgomeryville, Philadelphia, Whitehall • Soundex Electronics, Willow Grove • **RI** Ocean State Audio, Providence • **SC** Sound Advice, Columbia • **TX** Audio Concepts, Austin, Dallas, Houston • Hillcrest High Fidelity, Dallas • Houston Audio Concepts, Houston • **VA** High C Stereo, Leesburg • **WI** Sound Seller, Marinette • Specialized Sound, Madison

Pictured top: SR-34 Professional earspeaker.

Bottom: SR-84 Professional earspeaker and SRD-4 adaptor.

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# STAX®



# After four years at Hewlett-Packard, we w

In 1983, Dr. Godehard Guenther, President of a/d/s/, issued an injunction to our engineers and designers. "Guys," he said, "somebody's got to come up with a new loudspeaker standard. Let's make sure it's us."

Understand: he wasn't suggesting our existing loudspeakers weren't good. Rather, he was challenging us to address the shortcomings present even in the very best speakers, ours included. Shortcomings made all the more apparent by the sonic demands of the compact disc.

What we sought to build were speakers that didn't sound like a set of drivers stuffed in a box. Our goal was to create speakers characterized by a stable sound stage, pinpoint imaging and sound that seemed to emanate from free space.

It was a tall order. But the technology that has resulted—Unison™ . . . of one voice—is the kind other speaker makers will be emulating for years to come.



At a/d/s/, we make our own drivers. Our high definition woofers feature new cones, magnets, baskets and voice coil assemblies—painstakingly crafted to eliminate coloration.

## **We finally had the tools to be as critical as we were inclined to be.**

Our first task was to take a long, hard look at the limitations inherent in loudspeaker drivers. That required a powerful "microscope." And, fortunately, we had one—a high-resolution, super-fast computer from Hewlett-Packard, supported by a sophisticated mathematical program of our own devise.

Housed in a specially designed a/d/s/ acoustics laboratory, the computer gave us the ability to generate and analyze driver performance data with an accuracy, thoroughness and detail never attainable before.

In this veritable mountain of information, acoustic truths resided.

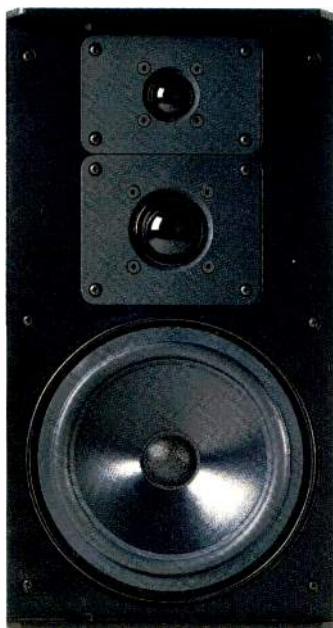


The CM7's 4th-order, 24dB/octave crossover network. Complex, sophisticated and expensive to manufacture, it's a major reason why the speaker produces such a stable image.

## **If the drivers aren't flawless, no amount of camouflaging will hide the flaws.**

One fact was obvious: the traditional materials used to construct woofers, tweeters and midranges—polypropylene, metal, cellulose compounds—were simply inadequate. So we set about to discover new ones ideally suited *at the molecular level* to the jobs they're required to do.

For the domes of our tweeters, we selected a proprietary copolymer that's exceedingly rigid, yet has superb internal damping and freedom from ringing. For the voice coil formers in our midranges, we adopted stainless



High technology enclosure materials enable us to make the new CM7 (left) and CM5 extremely compact without sacrificing interior volume. How compact? Consider that the CM5 measures a mere 9<sup>5</sup>/<sub>8</sub>" x 5<sup>3</sup>/<sub>4</sub>" x 6<sup>7</sup>/<sub>8</sub>".

Unison is a trademark of Analog and Digital Systems, Inc.

# the keyboard of a ere ready for a Steinway.

steel. Strong and non-magnetic, it enabled us to produce a motor quick enough to resolve the finest detail, even at the highest volume level. And so our research went, until our drivers were as perfect as the laws of physics allow.

**The crossover network.**  
**You don't see it. You shouldn't hear it, either.**

When most speaker makers design crossover networks, their primary concern is the interaction of the drivers. We were more ambitious. We sought crossovers that optimize the relationship between the drivers and their

enclosure, even with the room in which the system is played.

And we had an advantage: the excellence of our drivers allowed us to use *ideal* crossover points. Using these points, all the fundamental tones of the human voice can be reproduced by a single driver. With the computer, we evaluated countless prototypes of crossovers. A 4th-order network of the Linkwitz-Riley type proved the most appropriate. This type alone yields the response that satisfied our requirements for neutrality and realistic imaging. On a frequency response plot, the crossover points aren't even detectable.

**How good it ultimately sounds depends on the box you put it in.**

That's why we employed a polymer material filled with an



With its stainless steel coil former and copolymer cone, the UniSon midrange does something a cone midrange has never done before: span the fundamental range of the human voice—from 200 to 2,000 Hz.



Our tweeters' domes are made of yet another proprietary copolymer, giving them the unique ability to provide smooth, detailed, high frequency response at even the highest levels.

extremely high mass compound to produce the rigid, aurally "invisible" enclosures of our Compact Monitor Series. You'll be amazed by the weight of these little beauties—they're heavy. You'll be floored by the sound.

To our ears, our new speakers—the M Series and compact CM Series—offer convincing proof that UniSon technology does indeed define a new era in speaker performance.



The M12 is the instrument on the right.

a/d/s/



# EQUALIZERS

| MANUFACTURER   | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional | Number of Channels | Number of Bands per Channel | Bandwidth, Octaves | Switched Tap EQ? | Unity Gain Control? | Rated Output? | THD at Rated Output, rms V | S/N, -dB, at Rated Output, % | Variable Center Frequencies? | Boost/Cut Range, ±dB | Real-Time or Spectrum Analyzer? | Test Generator?<br>Pink Noise = P, Warble Tone = W | With Calibrated Mikes? | Number of Memories | Subsonic Filter? | Video Inputs? | Price, \$ | Notes   |  |
|----------------|--|--------------------|-----------------------------|--------------------|------------------|---------------------|---------------|----------------------------|------------------------------|------------------------------|----------------------|---------------------------------|--|------------------------|--------------------|------------------|---------------|-----------|---------|--|
| ACCUPHASE      | G-18   | 2                  | 33                          | 1/3                | No               | No                  | 2             | 0.002                      | 110                          | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 0             | No        | 5450.00 |  |
| ADC            | SS90   | 2                  | 10                          | 1                  | Yes              | Yes                 | 4             | 0.03                       | 100                          | No                           | No                   | 12                              | Yes  | No                     | No                 | 0                | 1             | No        | 99.99   |  |
|                | SS110  | 2                  | 10                          | 1                  | Yes              | Yes                 | 4             | 0.003                      | 100                          | No                           | No                   | 12                              | Yes  | No                     | No                 | 0                | 1             | Yes       | 149.95  |  |
|                | SS310  | 2                  | 10                          | 1                  | Yes              | Yes                 | 4             | 0.003                      | 100                          | No                           | No                   | 12                              | Yes  | Yes                    | Yes                | 0                | 2             | Yes       | 219.95  |  |
|                | SS325X   | 2                  | 12                          | 1                  | Yes              | Yes                 | 4             | 0.01                       | 100                          | No                           | No                   | 12                              | Yes  | Yes                    | Yes                | 4                | 2             | No        | 399.95  |  |
|                | SS525X(RI)   | 2                  | 12                          | 1                  | Yes              | Yes                 | 4             | 0.01                       | 100                          | No                           | No                   | 12                              | Yes  | Yes                    | Yes                | 4                | 2             | Yes       | 599.95  |  |
| AUDIO CONTROL  | Octave   | 2                  | 10                          | 1                  | Yes              |                     | 7.5           | 0.008                      | 118                          | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 1             | Yes       | 159.00  |  |
|                | Ten  | 2                  | 10                          | 1                  | Yes              |                     | 7.5           | 0.005                      | 120                          | No                           | No                   | 15                              | No   | No                     | No                 | 0                | 1             | Yes       | 229.00  |  |
|                | Series Two   | 2                  | 10                          | 1                  | Yes              |                     | 7.5           | 0.005                      | 120                          | No                           | No                   | 15                              | Yes  | W                      | Yes                | 0                | 1             | Yes       | 329.00  | Stepped warble generator; 0-dB indicator.  |
|                | Ten Plus   | 2                  | 10                          | 1                  | Yes              |                     | 7.0           | 0.009                      | 116                          | No                           | No                   | 15                              | Yes  | P                      | Yes                | 0                | 1             | Yes       | 429.00  | SPL display; rumble reducer.   |
| AUDIOSOURCE    | Series Two   | 2                  | 10                          | 1                  | Yes              |                     | 7.0           | 0.009                      | 116                          | No                           | No                   | 15                              | Yes  | P                      | Yes                | 0                | 1             | Yes       | 429.00  |  |
|                | Richter Scale  | 2                  | 6                           | 1/2                | Yes              |                     | 8.0           | 0.005                      | 120                          | No                           | No                   | 12                              | Yes  | W                      | Yes                | 0                | 1             | Yes       | 349.00  | Includes 24 dB/octave crossover and bridging adaptor.  |
|                | Series III   | 2                  | 6                           | 1/2                | Yes              |                     | 8.0           | 0.005                      | 120                          | No                           | No                   | 12                              | Yes  | W                      | Yes                | 0                | 1             | Yes       | 349.00  |  |
|                |  |                    |                             |                    |                  |                     |               |                            |                              |                              |                      |                                 |  |                        |                    |                  |               |           |         |  |
| BIAMP SYSTEMS  | EQ 290   | 1                  | 29                          | 1/3                | No               | Yes                 | †             | 0.005                      | ††                           | No                           | No                   | 12                              | No   |                        |                    | 0                | 0             | Yes       | 599.00  | †1.23 V at +4 dBm. ††-94 dB, from 0 Hz to 30 kHz.  |
|                | EQ 220   | 2                  | 10                          | 1                  | No               | Yes                 | †             | 0.005                      | ††                           | No                           | No                   | 15                              | No   |                        |                    | 0                | 0             | No        | 599.00  |  |
|                | EQ 230   | 2                  | 15                          | 2/3                | No               | Yes                 | †             | 0.005                      | ††                           | No                           | No                   | 12                              | No   |                        |                    | 0                | 1             | No        | 599.00  |  |
| CARVIN         | EQ2029   | 1                  | 29                          | 1/3                | No               | Yes                 |               | 0.01                       |                              |                              |                      | 15                              | No   | No                     | No                 | 0                | 0             | Yes       | 299.00  |  |
| CELLO          | Audio Palette  | 2                  | 6                           |                    |                  |                     |               |                            |                              |                              |                      |                                 |  |                        |                    |                  |               |           | 10,500. | Specs available on request.  |
| CERWIN-VEGA    | DB-10B   | 2                  | 1                           |                    |                  |                     | 2             | 0.025                      |                              |                              |                      | 10                              |  |                        |                    | 1                | Yes           |           | 59.95   | Operates at 30 Hz with subsonic filter below 20 Hz.  |
| DB SYSTEMS     | DB-5   | 2                  | 6                           |                    |                  |                     | 4             | .0008                      | 108                          | Yes                          |                      | 15                              |  |                        |                    |                  |               |           | 380.00  | Model DB-2A power supply or DBP-1 cable required.  |
| DENON          | DE-70B   | 2                  | 12                          | 1                  | Yes              | Yes                 | 1             | 0.003                      | 100                          | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 2             | No        | 500.00  | Built-in dynamic processor.  |
| DISTECH        | EQ 1   | 2                  |                             |                    | No               | No                  | 8             | 0.001                      | 100                          | No                           | No                   | +6                              | No   | No                     | No                 | 0                | 0             | Yes       | 950.00  | Bass alignment filter, operates from 20 to 100 Hz; for B & W 801 Matrix speaker. Version available for B & W 802, operates from 30 to 100 Hz. Dual mono; as above. |
|                | EQ 2   | 2                  |                             |                    | No               | No                  | 8             | .0005                      | 100                          | No                           | No                   | +6                              | No   | No                     | No                 | 0                | 0             | Yes       | 1600.00 |  |
| ESOTERIC SOUND | Re-Equalizer   | 2                  | 2                           | 10                 | No               | No                  | 3.5           | 0.02                       | 85                           | No                           | No                   | 16                              | No   | No                     | No                 | 36               | 0             | No        | 255.00  | For replay of early LPs, 78s, and transcriptions.  |
| FOSTEX         | 3030   | 2                  | 10                          |                    | No               | No                  |               | 0.03                       | 90                           | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 0             | No        | 250.00  |  |
| HARMAN KARDON  | EQ8  | 2                  | 10                          | 1/3                | Yes              | Yes                 | 2             | 0.02                       | †                            | No                           |                      | 12                              | No   | No                     | No                 |                  | 1             | ††        | 329.00  | †105 dB re: 0.5 V out. ††Variable subsonic filter.   |
| JRM            | Remote Unit  | 2                  | 6                           | 1                  | Yes              | Yes                 | 7             | 0.01                       | 110                          | No                           | No                   | 8                               |  |                        |                    |                  |               | Yes       | 350.00  | JRM preamp or 3BPB crossover required; continuously variable loudness.   |
| JVC            | SEAM770BK (RI)   | 2                  | 7                           |                    | Yes              | No                  | 1             | 0.03                       | 100                          | No                           | No                   | 12                              | Yes  |                        |                    | 12               | 1             | No        | 400.00  |  |
| KENWOOD        | GE-5010  | 2                  | 7                           |                    | Yes              | Yes                 | 3.7           | 0.006                      | 100                          |                              |                      | 12/6                            | Yes  |                        |                    | 10               | 1             |           | 249.00  |  |
|                | GE-1100  | 2                  | 12                          |                    | Yes              | Yes                 | 9             | 0.005                      | 105                          |                              |                      | 12                              | Yes  |                        |                    | 10               | 2             |           | 449.00  |  |
| KLARK-TEKNIK   | DN 360   | 2                  | 30                          | 1/3                | No               | Yes                 | †             | 0.01                       | ††                           | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 0             | Yes       | 1695.00 | †+4 dBm, ††-90 dBm, unweighted.  |
|                | DN 332   | 2                  | 16                          | 2/3                | No               | Yes                 | †             | 0.01                       | ††                           | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 0             | Yes       | 1095.00 |  |
|                | DN 300   | 1                  | 30                          | 1/3                | No               | Yes                 | †             | 0.01                       | ††                           | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 0             | Yes       | 1050.00 |  |
|                | DN 410   | 2                  | 5                           | 0.8-2              | No               | Yes                 | †             | 0.01                       | ††                           | Yes                          | Yes                  | +15, -25                        | No   | No                     | No                 | 0                | 0             | Yes       | 1095.00 | Parametric EQ.   |
| LUXMAN         | DN 405   | 1                  | 5                           | 0.8-2              | No               | Yes                 | †             | 0.01                       | ††                           | Yes                          | Yes                  | +15, -25                        | No   | No                     | No                 | 0                | 0             | Yes       | 695.00  | As above.  |
|                | G-111  | 2                  | 10                          | 1                  | Yes              | Yes                 | 0.15          | .0035                      | 112                          | No                           | No                   | 12                              | No   | No                     | No                 | 0                | 1             | No        | 250.00  |  |
| LYDKRAFT       | PE-1B  | 1                  | 1                           |                    | No               |                     | 15            | 1                          | 116                          | Yes                          | Yes                  | 14                              | No   | No                     | No                 | 0                | 0             | No        |         |  |
|                | ME-1A  | 1                  | 3                           |                    | No               |                     | 15            | 1                          | 111                          | Yes                          | No                   | 10                              | No   | No                     | No                 | 0                | 0             | No        |         |  |



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# EQUALIZERS

| MANUFACTURER         | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional    | Number of Channels         | Number of Bands per Channel   | Bandwidth, Octaves                  | Switched Tape EQ?                     | Unity Gain Control?                  | Rated Output, rms V                          | THD at Rated Output, %                       | S/N, - dB, at Rated Output             | Variable Center Frequencies?     | Boost/Cut Range, ±dB                   | Real-time or Spectrum Analyzer?     | Test Generator?<br>Pink Noise = P, Wave Tone = W | With Calibrated Mikes?     | Number of Memories           | Subsonic Filter?                 | Video Inputs?                    | Price, \$                                     | Notes  |   |
|----------------------|---|----------------------------|-------------------------------|-------------------------------------|---------------------------------------|--------------------------------------|--|--|--|----------------------------------|--|-------------------------------------|--|----------------------------|------------------------------|----------------------------------|----------------------------------|---|--|---|
| MARANTZ              | EQ 551<br>EQ 130<br>EQ 2292<br>EQ 2293<br>EQ 2294             | 2<br>2<br>2<br>2<br>2      | 10<br>10<br>7<br>10<br>10     |                                     | Yes<br>Yes<br>No<br>No<br>No          | Yes<br>Yes<br>No<br>No<br>No         |  | 100<br>No<br>No<br>No<br>No                  | No<br>No<br>No<br>No<br>No             | 12<br>12<br>12<br>12<br>12       | Yes<br>No<br>No<br>No<br>No            | P<br>No<br>No<br>No<br>No           | Yes<br>No<br>No<br>No<br>No                      |                            | 1<br>1<br>1<br>1<br>1        | No<br>No<br>No<br>No<br>No       | No<br>No<br>No<br>No<br>Yes      | 249.00<br>129.00<br>89.95<br>149.95<br>229.95 | Built-in surround-sound processor; amplification for rear channels (25 watts x 2); separate EQ for front and rear.   |   |
| NIKKO                | EQ-600<br>EQ-30M  | 2<br>1                     | 10<br>32                      | 1/3<br>1/3                          | Yes<br>No                             | No<br>Yes                            | 1<br>7                                       | 0.01<br>0.005                                | 100<br>110                             | Yes<br>Yes                       | No<br>No                               | 12<br>10                            | Yes<br>No  | P<br>No                    | Yes<br>No                    | 0<br>0                           | 1<br>0                           | No<br>No                                      | 359.95<br>399.95   |   |
| ONKYO                | EQ-140<br>EQ-240<br>Integra<br>EQ-35<br>Integra<br>EQ-540     | 2<br>2<br>2<br>2<br>2<br>2 | 7<br>7<br>12<br>12<br>12<br>1 | 1<br>1<br>1<br>1<br>1<br>1          | Yes<br>No<br>Yes<br>Yes<br>Yes<br>Yes | No<br>Yes<br>No<br>Yes<br>Yes<br>Yes | 0.15<br>0.15<br>0.15<br>0.15<br>0.15<br>0.15 | 0.01<br>0.01<br>0.01<br>0.01<br>0.01<br>0.01 | 100<br>100<br>100<br>100<br>100<br>100 | No<br>No<br>No<br>No<br>No<br>No | 12<br>12<br>12<br>12/6<br>12/6<br>12/6 | No<br>Yes<br>No<br>No<br>Yes<br>Yes | No<br>No<br>P<br>No<br>No<br>No                  | 0<br>0<br>0<br>0<br>0<br>0 | 1<br>1<br>0<br>2<br>2<br>2   | No<br>No<br>No<br>No<br>No<br>No | No<br>No<br>No<br>No<br>No<br>No | 150.00<br>240.00<br>330.00<br>400.00          |  |   |
| PAC                  | C.P.R. EQ-1<br>C.P.R. EQ-2                                    | 2<br>2                     |                               |                                     | No<br>No                              | No<br>No                             | 10<br>10                                     | 0.01<br>0.01                                 | No<br>No                               | No<br>No                         | + 7<br>+ 7                             | No<br>No                            | No<br>No   |                            |                              | Yes<br>Yes                       |                                  | 895.00<br>895.00                              | Low-frequency alignment filter for B & W 801 Matrix speaker. As above but for 802 Matrix.  |   |
| PIONEER              | GR-777<br>GR-555<br>GR-470                                    | 2<br>2<br>2                | 10<br>7<br>7                  |                                     | Yes<br>Yes<br>Yes                     |                                      | 0.02<br>0.03<br>0.03                         | 110<br>104<br>106                            |  |                                  |  | Yes<br>Yes                          |  |                            | 5<br>1<br>1                  |                                  |                                  | 370.00<br>225.00<br>120.00                    |  |   |
| PLEXUS AUDIO SYSTEMS | ABE-2   | 2                          |                               |                                     | Yes                                   |                                      | 4  | 0.02   | 95                                     |                                  | + 12                                   |                                     |  |                            | 1                            | Yes                              |                                  | 150.00  | Active EQ for Plexus SWS-2 subwoofer or other speakers.  |   |
| SAE                  | E101<br>E102  | 2<br>2                     | 16<br>10                      | 1/3<br>1                            | Yes<br>Yes                            | Yes<br>Yes                           | 2.5  | 0.02   | 100                                    | Yes<br>Yes                       | Yes<br>Yes                             | 16<br>16                            | No<br>Yes  | No<br>No                   | No<br>No                     | 20<br>20                         | 1<br>1                           | Yes<br>No                                     | 650.00   | Parametric EQ.  |
| SANSUI               | SE-3000<br>SE-2000<br>SE-1000                                 | 2<br>2<br>2                | 10<br>7<br>7                  | 1<br>1<br>1                         | No<br>No<br>No                        | No<br>No<br>No                       | 5<br>5<br>5                                  | 0.008<br>0.03<br>0.03                        | 110<br>95<br>75                        | No<br>No<br>No                   | No<br>No<br>No                         | 12<br>12<br>12                      | Yes<br>No<br>No                                  | No<br>No<br>No             | 0<br>0<br>0                  | 0<br>0<br>0                      | No<br>No<br>No                   | 290.00<br>120.00<br>90.00                     |  |   |
| SCOTT                | EQ 400  | 2                          | 10                            |                                     | Yes                                   |                                      |  | 0.009  | Yes                                    |                                  |  | Yes                                 |  |                            | 2                            |                                  |                                  |   |  |   |
| SESCOM               | PO-40   | 1                          | 5                             | 1                                   | No                                    | No                                   | 5  | 0.1  | 79                                     | No                               | No                                     | 12                                  | No   | No                         | No                           | 0                                | 0                                | No  | 71.40  | Requires PO-1 power supply, \$71.40.  |
| SHERWOOD             | EQ-1330   | 2                          | 9                             |                                     | Yes                                   | Yes                                  | 1  | 0.025  | 95                                     | Yes                              | No                                     | 12                                  | No   | No                         | No                           | 0                                | 1                                | No  | 129.95   |   |
| SOUNDCRAFTSMEN       | AE2000<br>PRO-EQ 22<br>DC2215<br>PRO-EQ 44                    | 2<br>2<br>2<br>2           | 10<br>10<br>10<br>21          | 1<br>1<br>1<br>1/3-2/3              | Yes<br>Yes<br>Yes<br>Yes              | Yes<br>Yes<br>Yes<br>Yes             | 10<br>10<br>10<br>10                         | 0.01<br>0.01<br>0.01<br>0.01                 | 114<br>114<br>114<br>114               |                                  |  | 15<br>15<br>15<br>15                | Yes<br>Yes<br>Yes<br>Yes                         | Yes<br>Yes<br>Yes<br>Yes   | 1<br>1<br>1<br>1             |                                  |                                  | 849.00<br>349.00<br>449.00<br>549.00          | Differential comparator system; auto scan. Differential comparator system; C-MOS; includes test record; also available with 17-inch-wide front panel. Includes test record; true inductor-coil circuitry. Differential comparator system; C-MOS; includes test record; also available with 17-inch-wide front panel. |   |
| SOUND ENGINEERING    | PFM-8   | 2                          | 3                             | Adj.                                | Yes                                   | Yes                                  | 17   | 0.03   | 118                                    | Yes                              | Yes                                    | + 4, -12                            | No   | P                          | No                           | 0                                | 3                                | Sel.  | 1750.00  | Tilt control; peak/average level meters.  |
| SYMETRIX             | SX201   | 1                          | 3                             | .05-3.3                             | No                                    | Yes                                  | †  | 0.02   | 101                                    | Yes                              | Yes                                    | + 15, -30                           | No   | No                         | No                           | 0                                | 0                                | No  | 239.00   | †15.8 V (+ 24 dBm into 600 ohms). Parametric EQ/preamp.   |
| TEAC                 | EQA-3<br>EQA-6<br>EQA-22                                      | 2<br>2<br>2                | 10<br>10<br>10                | 1<br>1<br>1                         | Yes<br>Yes<br>Yes                     | No<br>No<br>No                       |  | 0.03<br>0.03<br>0.01                         | 70<br>70<br>90                         | No<br>No<br>No                   | No<br>No<br>No                         | 12<br>12<br>12                      | No<br>No<br>Yes                                  | No<br>No<br>No             | No<br>No<br>No               | 0<br>0<br>0                      | 1<br>1<br>2                      | No<br>No<br>No                                | 99.95<br>119.95<br>169.95  |   |
| TECHNICS             | SH-8075<br>SH-8066<br>SH-8058<br>SH-8038<br>SH-8017           | 2<br>2<br>2<br>2<br>2      | 36<br>12<br>7<br>7<br>7       | 1/3<br>1<br>1 1/3<br>1 1/3<br>1 1/3 | Yes<br>Yes<br>Yes<br>Yes<br>Yes       | No<br>No<br>No<br>No<br>No           | 1<br>1<br>1<br>1<br>1                        | 0.002<br>0.003<br>0.003<br>0.005<br>0.005    | 110<br>107<br>107<br>107<br>107        | No<br>No<br>No<br>No<br>No       | No<br>No<br>No<br>No<br>No             | 3/12<br>12<br>12<br>12<br>12        | No<br>No<br>Yes<br>No<br>No                      | No<br>P<br>No<br>No<br>No  | No<br>Yes<br>No<br>No<br>No  | 0<br>8<br>6<br>0<br>0            | 1<br>2<br>1<br>1<br>1            | Yes<br>No<br>No<br>No<br>No                   | 899.00<br>599.00<br>219.00<br>119.00<br>89.00  |   |
| VECTOR RESEARCH      | VQ-115<br>VQ-125  | 2<br>2                     | 10<br>10                      | 1<br>1                              | Yes<br>Yes                            | Yes<br>Yes                           | 1<br>1                                       | 0.009<br>0.009                               | 109<br>109                             | No<br>No                         | No<br>No                               | 12<br>12                            | No<br>Yes  | No<br>Yes                  | Opt.                         | 1<br>2                           | No<br>Yes                        | No<br>No                                      | 129.95<br>249.95   |   |
| YAMAHA               | EQ-1100U(RI)<br>EQ-630(RI)<br>EQ-500U<br>EQ-330<br>YST EQ-90M | 2<br>2<br>2<br>2<br>2      | 10<br>10<br>10<br>10<br>7     | 1<br>1<br>1<br>1<br>1               | Yes<br>Yes<br>Yes<br>Yes<br>No        | No<br>No<br>Yes<br>Yes<br>No         | 1<br>1<br>1<br>1<br>8                        | 0.006<br>0.006<br>0.005<br>0.005<br>0.005    | 107<br>105<br>105<br>105<br>105        | No<br>No<br>No<br>No<br>No       | No<br>No<br>No<br>No<br>No             | 12<br>12<br>12<br>12<br>12          | Yes<br>Yes<br>Yes<br>No<br>Yes                   | P<br>No<br>P<br>No<br>No   | Yes<br>No<br>Yes<br>No<br>No | †<br>†<br>0<br>0<br>†            | 2<br>1<br>1<br>1<br>0            | Yes<br>No<br>Yes<br>No<br>No                  | 599.00<br>469.00<br>399.00<br>179.00<br>360.00   | †Three curves factory-set, four curves user-set.<br>†Four curves factory-set, four curves user-set.<br>†As above. |



# The Home As Theater



Place EQ/Amb. S/G Processor/  
Sign. Processor/Cross here

## Serious Tools For An Indescribable Experience



Escape to new worlds of wonder and realism with Shure HTS Theater Reference Components. You'll experience all the exhilarating energy of your favorite music and the intensity and drama of motion pictures, with a spatial realism as you've never experienced before.

The award-winning HTS5300 Acra-Vector® Logic Decoder is the heart of the Home Theater. Its exclusive Acra-Vector circuitry delivers precise re-creation of directional cues, and smooth, accurate imaging over a wide dynamic range. The HTS5300's Acoustic Space Generator provides excellent ambience recovery and uncanny surround channel reproduction. It is truly the world standard.



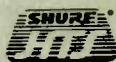
The Home Theater springs to life with HTS Loudspeakers, including the HTS50CF Center Front, HTS50LRS Left-Right-Surround, and the HTS50SW Subwoofer. Designed to outperform conventional loudspeakers, the HTS Loudspeakers provide superior sound within the multi-channel format while assuring the broad spatial directionality, and well-controlled off-axis frequency response that leads to Virtual-Imaging™.

The HTS50SPA Signal Processing Amplifier is designed to handle the dramatic sound level requirements for both music and movies. Special HTS speaker modes, selectable for each channel, program the amplifier to match the loudspeaker design parameters such as power handling, cross-over equalization, diffraction equalization and excursion limits for optimum performance. This makes the HTS50SPA a uniquely "intelligent" amplifier unlike any other.



**Continued on Next Page**





## Critical Commentary



## Audio/Video Specialists

### Stereo Review/ William Livingstone

"I Give It Five Stars... When the sound of a home theater system is this good, you can consider video a further dimension of audio... I am impressed by the Shure system, by its flexibility, by its ease of operation... Friends who came to watch and listen with me were reluctant to go home... (With music material) I was flooded by extraordinarily clean sounds from deep bass to crystalline highs and the first words out of my mouth were, 'It sure beats stereo.'"

### High Fidelity/ David Ranada

"Stunning New Home Theater Reference System... almost precisely the gear needed to equip an actual movie theater for surround sound playback... As a complete solution to movie-sound playback, it's one of a kind and unlikely to be equaled, let alone surpassed, in the near future."

### Stereophile/ Bill Sommerwerck

"The Shure HTS5300 simply wipes up the floor with the other decoders; the competition isn't even close. The 5300 is so much more transparent and detailed that you can even hear the difference on voices!... Broadly speaking, the Shure has the best crosstalk cancellation and logic action of these decoders, and by a wide margin... when the source is first-rate, the superior sound of the Shure HTS5300 is instantly apparent and preferable. If the sound of the Shure had to be summed up in two words, they would be 'clear' and 'open.'"

### Video Review/ Ron Goldberg

"The aural perception of 'being there' was so convincingly reproduced that it was almost disconcerting—a lot of movie theaters can't boast a sound system this good... How does it sound? In a word, breathtaking... For those who are looking for the ultimate audio upgrade, it's hard to think of a more potent system than the Shure HTS... the Shure HTS is as close to 'state of the art' as you're likely to see for a while."

### Chicago Tribune/ Rich Warren

"The Home Theater Reference System makes your mouth water for HDTV. After experiencing movies with Shure's surround system, you'll hate to go back to the movie theater. Most theaters just don't have sound this good. You'll be impatient for home picture quality to equal the HTS sound quality. HTS is to sound what HDTV is to video."

### Audio/ Howard Roberson

"(The entire Theater Reference System) is truly the result of a system design approach. It is not a collection of already available components stuck together just to have all the parts... Ben Hur gave an emphatic demonstration of what is possible with a good source and a good decoder... The Shure HTS5300 provided the best localization of dialog and effects for movies, in any format, of all surround processors to date."

### Video/ Lancelot Braithwaite

"Shure's HTS Theater Reference System offers perfectly matched components... The HTS was designed to mimic sound at theater-like volumes... We recommend it highly as the only system geared toward studio movie sound."

## Visit your local Shure HTS audio/video specialist for the indescribable theater experience

- ALABAMA**  
Audition, Birmingham
- ALASKA**  
Shimeks & Co., Anchorage
- ARIZONA**  
Hi Fi Sales, Mesa • Audiotronix, Phoenix • Buzz Jensen's Sound Advice, Phoenix • Audiotronix, Tucson
- CALIFORNIA**  
Jonas Miller Sound Inc., Brentwood • Future Sound, Burlingame • Stereo Vision, Encinitas • Catania Sound, Greenbrae • Havens & Hardesty Audio Systems, Huntington Beach • Christopher Hansen Ltd., Los Angeles • Audio Command Systems, Los Angeles • Henry Radio, Los Angeles • GNP Audio Video, Pasadena • Hermery's Inc., San Carlos • Ultimate Sound, San Francisco • R Squared, Santa Monica • Catania Sound, Santa Rosa • Cluskin's Camera Corner, Inc., Stockton • Dimensions in Stereo, Torrance • Audio Den, Van Nuys • Wilson Audio Video Entertainment, Woodland Hills
- COLORADO**  
Listen Up Audio Video, Boulder • Listen Up Audio Video, Denver • Custom Audio Video, Minturn
- FLORIDA**  
Boss Audio Video, Altamonte Springs • Sound Plus Wood, Boca Raton • Sound Design & Engineering, Ft. Lauderdale • Stereo World, Ft. Meyers • Spectrum Home Theater Systems, Jacksonville • Sound Gallery, Melbourne • Stereo World, Naples • All Pro Sound, Pensacola • Cooper Radio Company, Pinellas Park • Kaban's, Sarasota • Select Audio Video, Vero Beach
- GEORGIA**  
Stereo & Video Designs, Atlanta • Audio Video Design Consultants, Penbrooke • Downtown Records Unlimited, Savannah
- HAWAII**  
Yafuso T.V. & Appliance, Hilo • Video Life Hawaii, Honolulu • Honolulu Audio & Video, Honolulu • Sound Specialties of Kona, Kailua Kona
- ILLINOIS**  
Columbia Audio Video, Arlington Hts. • Glenn Poor's Audio Video, Champaign • Victor's Stereo, Chicago • Mills Recording Company, Chicago • Columbia Audio Video, Highland Park • Sound Interiors, Inc., Hinsdale • Greyan Enterprises, Inc., Homewood • Sound Incorporated, Naperville • ISR, Inc., Naperville • Gill Custom House, Inc., Palos Hills • Columbia Audio Video, Rockford
- INDIANA**  
Audio Workshop, Indianapolis • Stereo Crafters, Terre Haute
- IOWA**  
Stereo Sound Studios, Des Moines • Golden Ears Audio Video, Fairfield • D.B. Acoustics, Marion • John's Hi Fi, Marshalltown
- KANSAS**  
ESP Industrial Communications, Overland Park • Accent Sound, Overland Park • Custom Sound, Wichita
- KENTUCKY**  
Sound Gallery of Louisville, Louisville • Audio Video by Design, Louisville
- LOUISIANA**  
Sound Electronics, Lafayette
- MARYLAND**  
Audio Buys, Gaithersburg
- MICHIGAN**  
Almas Hi Fi Stereo, Birmingham • Almas Hi Fi Stereo, Dearborn • Almas Hi Fi Stereo, Farmington Hills • City Animation, Grand Rapids • City Animation, Troy • Vitex Inc., Walled Lake • Future Sound & Communication, Ypsilanti
- MINNESOTA**  
Hi Fi Sound Electronics Inc., Minneapolis
- MISSOURI**  
Stereo One, Inc., Cape Girardeau • Antech Labs, St. Louis
- NEBRASKA**  
Custom Electronics, Omaha
- NEVADA**  
Audio Video Den, Carson City
- NEW JERSEY**  
Hi Fi Haven, Brunswick • Conklin's, Wykoff
- NEW MEXICO**  
Sound Ideas, Albuquerque
- NEW YORK**  
Theater Design Assoc., Inc., Brooklyn • Visual Environments, Jamaica • Audio Den, Lake Grove • Lyric Hi Fi, New York • Stereo Exchange, New York • Altair Audio, Inc., New York • P & D Sound Insights, Occanee • Gala Sound, Rochester • Audio Breakthroughs, Woodbury
- NORTH CAROLINA**  
Taylor House, Denver • Taylor House, Sherrill's Ford
- OHIO**  
Audio Visions Plus, Cincinnati • Paragon Sound, Toledo • Atlantis Home Entertainment, University Heights
- OKLAHOMA**  
Spectrum Electronics Inc., Oklahoma City
- OREGON**  
Chelsea Audio, Beaverton • Chelsea Audio, Portland
- PENNSYLVANIA**  
Hi Fi Center, McKeesport
- SOUTH CAROLINA**  
Laser Experience, Columbia
- TENNESSEE**  
Soundroom, Johnson City • Hi Fi House, Inc., Knoxville • Nicholsons High Fidelity, Nashville • Cumberland Audio, Nashville
- TEXAS**  
Don's Hi Fi, Amarillo • Tap Advanced Communications Group, Arlington • La Frontera, Brownsville • Preston Trail Audio, Dallas • Labute Professional Sound, Dallas • Dallas Audio Concepts, Dallas • Howell Electronics, Inc., El Paso • Groove Audio Video, Houston • Houston Audio Concepts, Inc., Houston • Metex International Corp., Laredo
- UTAH**  
Intermountain Video, Salt Lake City • Audioworks, Salt Lake City
- VIRGINIA**  
Audio Buys, Falls Church • Audio Buys, Manassas • Ambassador Enterprises, Inc., Portsmouth
- WASHINGTON**  
Home Entertainment by Design, Bellevue • Pro Comm, Lynnwood
- WISCONSIN**  
Sound World, Appleton • E.M.E. Audio Systems, Eau Claire • Sound World, LaCrosse • Audio Emporium, Milwaukee
- CANADA**  
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# AMBIENCE & SURROUND SOUND PROCESSORS

| MANUFACTURER      | UNIT TYPE               |                |   |         |                 |             |  |     |  |  | DELAY FUNCTIONS                   |                      |                                    |     |                |     |                                 |         |  |  | Price, \$ | Notes |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|-------------------|-------------------------|----------------|---|---------|-----------------|-------------|--|-----|--|--|-----------------------------------|----------------------|------------------------------------|-----|----------------|-----|---------------------------------|---------|--|--|-----------|-------|-----------------------------|--|--------|--|--------------------------|--|------------------------|--|--------------------|--|-------------------------|--|---------------|--|
|                   | Model                   |                | Remote Included, (RI) Remote Optional, (RO) |         | Matrix—See Code |             | Time Manipulation: Delay = D, Reverb = R |     | Other Manipulation Techniques: F = Comb Filter = C, Frequency Shaping = F, Other = O |  | Phase Manipulation = P, Other = O |                      | Number and Use of Outputs—See Code |     | Delay Time, ms |     | Number of Hall Room Simulations |         | Hall Room Adjustments: Volume = V, Shape (Height:Width Ratio) = S  |  |           |       | Continuous Amp Power, Watts |  | THD, % |  | S/N Ratio: "A" Wtd., -dB |  | Channel Separation, dB |  | Stereo Simulation? |  | Number of Tape Monitors |  | Video Inputs? |  |
|                   |                         |                |   |         |                 |             |  |     |  |  |                                   |                      |                                    |     |                |     |                                 |         |  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| AUDIOSOURCE       | SS One/II               | D/O            | O   | F/P/O   | 2B              | 10-30       |  |     |  |  | 30 x 2                            | 0.01                 | 85                                 | 60  | Yes            | 1   | No                              | 199.95  | 100-Hz and 10-kHz boost; front/rear fader; master volume.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | SS Two(RI)              | D/O            | O   | F/P/D   | 2B              | 10-30       |  |     |  |  | 30 x 2                            | 0.01                 | 85                                 | 60  | Yes            | 1   | No                              | 249.95  | As above.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| DENON             | AVC-2000(RI)            | DP             | O   |         | 3F, 2B          | 15,20<br>30 | 2  |     |  |  | †                                 | 0.08,<br>0.4,<br>2.0 |                                    |     | Yes            | 3   | 7                               | 1000.00 | †Five-channel amp (front, 75 watts x 2; center, 25 watts x 1; rear, 25 watts x 2). Digital delay; video detail and sharpness controls; S-video inputs and outputs. |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | AVC-700(RI)             | DP             | O   |         | 2F, 2B          | 15,20<br>30 | 1  |     |  |  | 55 x 2,<br>18 x 2                 | 0.4,<br>2.0          |                                    |     | Yes            | 1   | 5                               | 600.00  | Digital delay; S-video inputs and outputs; five-channel preamp outputs.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| FISHER            | CAV-875                 | D/D            | O   | P/D     | 2F, 2B          | 10-50       | 5  |     |  |  | 30 x 2                            | 0.5                  | 85                                 | 70  | Yes            | 3   | 5                               | 399.95  | Includes speakers.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | CAV-975                 | DP/D           | O   | F/P/D   | 2F, 2B          | 10-30       | 5  |     |  |  | 20 x 3                            | 0.4                  | 85                                 | 70  | Yes            | 3   | 5                               | 499.95  | As above.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| FOSGATE-AUDIONICS | 3606 Pro-Plus           | D/D            |   | F/C/P/O | 3F, 2B, SW      |             | 3  |     |  |  | 40 x 2                            | 0.10                 | 90                                 | 60  | Yes            | 1   | No                              | 629.00  | Logic steering; Class-A audio circuitry.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | 3608 Pro-Plus(RI)       | D/O            | O   | F/C/P/O | 3F, 2B, SW      | 16-32       | 3  | V   |  |  | 40 x 2                            | 0.10                 | 90                                 | 60  | Yes            | 1   | No                              | 999.00  | As above.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | 3610 Pro-Plus(RI)       | D/O            | O   | F/C/P/D | 3F, 2B, 2S, SW  | 16-32       | 3  | V   |  |  |                                   | 0.10                 | 90                                 | 60  | Yes            | 1   | Yes                             | 1429.00 | As above.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| GC-THORSEN        | 30-8700                 | O              | O   | C/P     | 2F, 2B          | 10-30       | 4  | V   |  |  | 12 x 1                            | †                    | ††                                 | 43  | Yes            |     |                                 | 160.55  | †Front, 0.08%; rear, 0.5%. ††Front, 70 dB; rear, 60 dB.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| JVC               | XPA1010TN (RI)          | O              | D/R   | F/O     | 4F, 2B          | 0-200       | 40                                       | V/S |  |  |                                   | 0.002                | 110                                |     | No             | 1   | No                              | 1200.00 |  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | SUA30                   | D/O            | O   | F/P     | 2F, 2B          | 15-30       | 2  |     |  |  | 10 x 2                            | 0.5                  | 85                                 |     | Yes            | 1   |                                 | 235.00  |  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | SUA400(RI)              | D/O            | O   | F/P     | 2F, 2B          | 15-30       | 2  |     |  |  | 10 x 2                            | 0.5                  | 85                                 |     | Yes            | 1   |                                 | 305.00  |  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| LEXICON           | CP-1                    | D/DP/O         | D/R   | F/C/P/D | 3F, 2B, 2S, SW  | †           | 21                                       | V/S |  |  |                                   | 0.05                 | 85                                 | 40  | Yes            | 1   | No                              | 1295.00 | †D mS to 14 S. True digital decoding; auto azimuth; auto input balance.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | CP-2                    | D/DP/O         | O   | F/D     | 3F, 2B, SW      | 0-32        | 0  |     |  |  |                                   | 0.05                 | 85                                 | 40  | Yes            | 0   | No                              | 895.00  | As above.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| LIRPA LABS        | U8-IT                   | D/O/O<br>W/O/P | D†  | O       | 3F, 2F, 2B, 3B  | †           | ††                                       |     |  |  | Var.                              | 50.3                 | 2.5                                | 1/2 | Var.           | 1/2 | No                              | 99.95   | †15 mins. inbound, 20 outbound (25 on L.I.E.). ††Presets include "Concert Hall, Coughs" and "Jazz Club, Drunks at Bar."  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| LUXMAN            | F-105(RI)               | D/O            | O   | O       | 3F, 2B          | 10-35       | 0  | V   |  |  | 25 x 2                            | 0.05                 | 64                                 |     | Yes            | 2   | Yes                             | 600.00  | Serves as system remote and switching center.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| MARANTZ           | SQ 2294                 | O              |   |         | 2F, 2B          |             |  |     |  |  | 25 x 2                            |                      |                                    |     |                | 1   | Yes                             | 229.95  | Amplification for rear channels only; independent EQ settings for front and rear channels.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| MEMOREX           | DSS-100                 |                | O   |         | 2F, 2B          | 20          |  |     |  |  | 5 x 4,<br>10 x 2                  |                      |                                    |     | Yes            | 1   | No                              |         |  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| NEC               | Renaissance AVD-700(RI) | D/D            | O   | F/P     | 3F, 2B, 2S, SW  | 1-92        |  |     |  |  |                                   | 0.005                | 100                                | 60  | No             | †   | Yes                             | 729.00  | Digital delay.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | Renaissance PLD-910(RI) | DP/O           | D/R   |         | 3F, 2B, 2S, SW  | 1-94        |  |     |  |  |                                   | 0.005                | 100                                |     | No             |     |                                 | 999.00  | As above; independent delay for left and right speakers.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | AV-210(RI)              | D/O            | O   |         |                 | 20          |  |     |  |  | 20 x 2                            | 0.3                  | 98                                 |     | No             |     | Yes                             | 299.00  | Digital delay.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | PLD-310(RI)             | DP             | O   | F/P     | 3F, 2B, SW      | 20          | 1  | V   |  |  |                                   | 0.01                 |                                    |     | No             |     | No                              | 449.00  | As above.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | Renaissance PLA-710(RI) | DP/O           | O   |         | 3F, 2B, SW      | Var.        | 3  | V   |  |  | 30 x 2,<br>60 x 1                 | 0.008                | 105                                |     | No             | 1   | Yes                             | 699.00  | As above; built-in test tone; motorized volume control; S terminals.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | Renaissance PLD-710(RI) | DP/O           | O   |         | 3F, 2B, SW      | Var.        | 3  | V   |  |  |                                   | 0.015                | 90                                 |     | No             | 1   | Yes                             | 599.00  | As above.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| PHILIPS           | RV450 Pro               | DP             | O   | P       | 4F, 4B          | 20          |  |     |  |  | 15                                | 0.3                  | 72                                 |     |                |     | No                              | 379.00  |  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
| PIONEER           | VSP-555(RI)             | D/O            |   |         |                 |             |  |     |  |  | 30 x 2                            | 0.05                 | 90                                 |     | Yes            |     | Yes                             | 375.00  | Dolby, stadium, and simulated surround.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | SP-700D                 | DP             | O   | F/P     | 3F, 2B, 2S, SW  | 1-50        | 32                                       | V/S |  |  |                                   |                      | 90                                 |     | Yes            |     | No                              | 700.00  |  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | SP-91D                  | DP             | O   | F/P     | 3F, 2B, 2S, SW  | 1-50        | 32                                       | V/S |  |  |                                   |                      | 95                                 |     | Yes            |     | No                              | 1000.00 | 18-bit D/A conversion.   |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |
|                   | SR-60                   |                | R   | O       | 2F              |             |  | V   |  |  |                                   | 0.003                | 114                                |     | No             | 1   | No                              | 225.00  | Reverb amplifier.  |  |           |       |                             |  |        |  |                          |  |                        |  |                    |  |                         |  |               |  |



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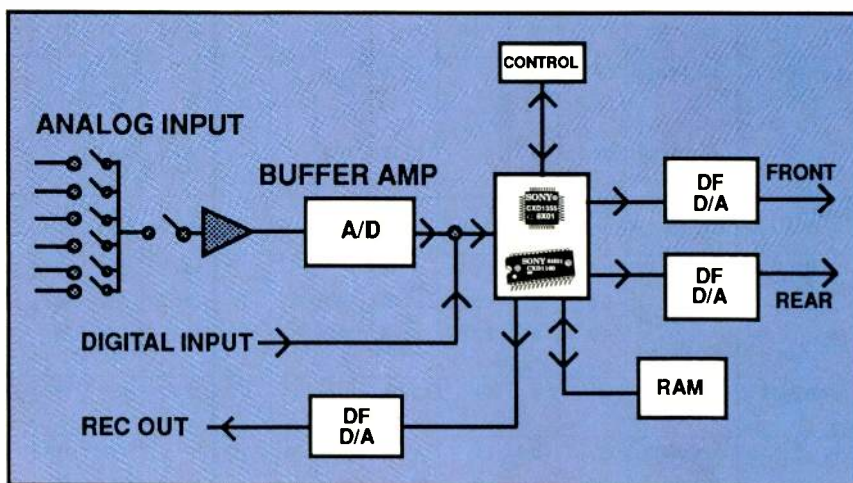
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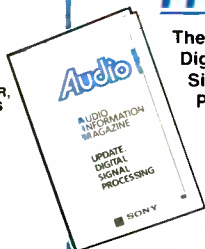
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| MANUFACTURER             | UNIT TYPE  |      |                 |     |  |                           |   |     |                                    |                    | DELAY FUNCTIONS |  |                                 |  |  | <div>MATRIX CODE<br/>A—Ambisonics<br/>O—Dolby Surround<br/>DP—Dolby Pro-Logic<br/>H—Hafler Dynaquad<br/>QS—QS<br/>SQ—SQ<br/>O—Other</div> <div>OUTPUT CODE<br/>2F—Left &amp; Right Front<br/>3F—Left, Center, &amp; Right Front<br/>2B—Left &amp; Right Back<br/>3B—Left, Center, &amp; Right Back<br/>2S—Left &amp; Right Sides<br/>SW—Subwoofer</div> |       |     |    |     |                             |        |  |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|--------------------------|--|------|-----------------|-----|--|---------------------------|---|-----|------------------------------------|--------------------|-----------------|--|---------------------------------|--|--|---|-------|-----|----|-----|-----------------------------|--------|--|--|-----------------------------|--|------------------------|--|--------------------|--|-------------------------|--|---------------|--|-----------|--|-------|--|--|
|                          | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional |      | Matrix—See Code |     | Time Manipulation: Delay = D, Reverb = R |                           | Other Manipulation Techniques:<br>Frequency Shaping = F, Comp. Filter = C,<br>Phase Manipulation = P, Other = O |     | Number and Use of Outputs—See Code |                    | Delay Time, ms  |  | Number of Hall/Room Simulations |  | Hall/Room Alignment: Volume = V,<br>Shape (Height/Width Ratio) = S |   |       |     |    |     | Continuous Amp Power, Watts |        | THD, %   |  | SN Ratio, "A" Wtd. . . - dB |  | Channel Separation, dB |  | Stereo Simulation? |  | Number of Tape Monitors |  | Video Inputs? |  | Price, \$ |  | Notes |  |  |
|                          |  |      |                 |     |  |                           |   |     |                                    |                    |                 |  |                                 |  |  |   |       |     |    |     |                             |        |  |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| PROTON                   | SD-1000(RI)  | O    |                 |     |  | 3F, 3B,<br>2S, SW         |   |     |                                    |                    |                 |  |                                 |  |  |   | 0.008 | 80  | 58 | Yes | 1                           | Yes    | 999.00   | Cinema/music/bypass selector; dialog<br>scatter reduction; mute function.  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SANSUI                   | DS-77  | QS/O | D               | P   |  | 3B                        | 20  | 3   | V                                  | 10 x 2             |                 |  |                                 |  |  |   | 0.09  | 90  |    | Yes | 1                           | Yes    | 400.00   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SHARP                    | SM-A75(RI)   | D/O  | D               | O   |  | 2F, 2B                    | 0-92  | 14  | V/S                                | 35 x 2,<br>25 x 4  |                 |  |                                 |  |  |   | 0.8   | 82  | 50 | No  | †                           | 4      | 599.95   | †Two VHS, one audio tape.  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SHERWOOD                 | ES-1280  | D/O  | D               |     |  | 2B                        | 15-30   | 4   | V                                  | 20 x 2             |                 |  |                                 |  |  |   | 0.3   | 86  |    | Yes | 1                           | No     | 199.95   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SHURE HTS                | HTS5300(RI)  | DP   | D               | O   |  | 3F, 2B,<br>SW             | 16-36   |     |                                    |                    |                 |  |                                 |  |  |   | 0.1   | 90  | 65 | Yes | 1                           | No     | 1250.00  | Logic steering; digital delay.   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SDNY ES                  | SDP-777ES<br>(RI)  | DP/O | D               | D   |  | 3F, 2B,<br>SW             | 0.1-<br>80  | 3   |                                    |                    |                 |  |                                 |  |  |   | 0.008 | 90  |    | Yes | 1                           | 4      | 850.00   | Digital preamp/surround processor<br>(see also "Preamplifiers").   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | TA-E1000ESD<br>(RI)  | DP/O | D/R             | F/O |  | 3F, 2B,<br>SW             | 0.1-<br>2500  | 20  | V/S                                |                    |                 |  |                                 |  |  |   | 0.003 | 110 |    | Yes | 2                           | 5      | 1000.00  |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SOUND<br>CONCEPTS        | SSD550   | D    | D/R             |     |  | 2F, 2B                    | 5-100   |     | V                                  |                    |                 |  |                                 |  |  |   | 0.1   | 92  | 80 | Yes |                             | No     | 869.00   | Music/film mode switching.   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SSI<br>SURROUND<br>SOUND | System<br>1000   | D    | D               |     |  | 3F, 2B,<br>SW             | 10-30   | 0   |                                    | 20 x 2             |                 |  |                                 |  |  |   | 0.05  | 85  | 50 | Yes | 1                           | No     | 199.00   | With speakers, \$249.00.   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | System<br>4000II(RI)                                       | D/O  | D               |     |  | 3F, 2B,<br>SW             | 10-30   | 0   |                                    | 45 x 2             |                 |  |                                 |  |  |   | 0.03  | 95  | 70 | Yes | 4                           | 4      | 699.00   | Logic steering; amp switchable for<br>center channel or surround channels.<br>Logic steering; adjustable center-<br>channel balance. |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | System<br>4500(RI)   | D/O  | D               |     |  | 3F, 2B,<br>4S, SW         | 10-30   | 0   |                                    |                    |                 |  |                                 |  |  |   | 0.03  | 95  | 70 | Yes | 4                           | 4      | 799.00   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| SYNERGEX                 | HS-1   | O    |                 |     |  | 2B                        |   |     |                                    | 15 x 2             |                 |  |                                 |  |  |   | 0.1   | 83  | 25 | No  | 2                           | No     | 499.00   | Logic steering; automatic dialog<br>balance.   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | HS-7(RI)   | O    |                 |     |  | 4F, 2B,<br>2SW            |   |     |                                    |                    |                 |  |                                 |  |  |   | 0.2   | 83  | †  |     | 1                           | Yes    | 895.00   | †25 to 50 dB. Logic steering.  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| TECHNICS                 | SU-AV55(RI)  | D/O  | D/R             | P   |  | 3F, 2B                    | 1-50  |     |                                    | 55 x 2,<br>10 x 2  |                 |  |                                 |  |  |   | 0.2   | 90  |    | Yes | 2                           | Yes    | 729.00   | Amplification for rear channels only.  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | SH-AV40  | D/O  | D/R             | P   |  | 3F, 2B                    | 15-30   | 2   |                                    | 20 x 2             |                 |  |                                 |  |  |   | 0.8   | 90  |    | Yes | 2                           | Yes    | 219.00   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| TOSHIBA                  | XB-1000(RI)  | D/O  | D/R             | F   |  | 2F, 2B                    | 1-99  | 7/5 |                                    | 50 x 4             |                 |  |                                 |  |  |   | 0.009 |     |    |     |                             | 4      | 999.00   | Amp bridges to 120 watts x 2; includes<br>dual D/A converters; see also<br>"Amplifiers."   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| VECTOR<br>RESEARCH       | VRX-9200R<br>(RI)  | D/H  | D/R             | C/P |  | 3F, 2B,<br>SW             | 20  | 1   |                                    | 120 x 2,<br>40 x 4 |                 |  |                                 |  |  |   | 0.03  | 85  | 60 | No  | 1                           | Yes    | 849.99   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| YAMAHA                   | DSP-3000(RI)   | D/O  | D               | O   |  | 5F, 3B,<br>2S, SW         | 1-150   | 35  | V/S                                |                    |                 |  |                                 |  |  |   | †     | 110 |    | No  | 1                           | Yes    | 1899.00  | †Main channels, 0.002%; effects<br>channels, 0.005%.   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | OSR-100<br>PRO(RI)   | DP   | D               |     |  | 3F, 2B                    | 20 or<br>30   |     |                                    |                    |                 |  |                                 |  |  |   | 0.003 | 90  |    | No  | 1                           | No     | 599.00   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | DSP-100U(RI)   | D/O  | D               | O   |  | 4F, 2B,<br>SW             | 1-150   | †   | V/S                                |                    |                 |  |                                 |  |  |   | ††    | 100 |    | No  | 1                           | Yes    | 699.00   | ††12 simulations with 21 variations.<br>††Main channels, 0.002%; effects<br>channels, 0.015%.  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | AVC-50(RI)   | D/O  | D               | C   |  | 2F or 2B                  | 10-30   | 5   |                                    | 45 x 2             |                 |  |                                 |  |  |   | 0.05  | 103 | 65 | Yes | 2                           | 4      | 569.00   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | AVC-30(RI)   | D/O  | D               | C   |  | 3F, 2B                    | 20†   | 3   |                                    | 100 x 2,<br>20 x 2 |                 |  |                                 |  |  |   | 0.05  | 100 | 60 | No  | 2                           | 2      | 469.00   | †For Dolby Surround.   |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | SR-50B   | D/O  | D               | C   |  | 2B                        | 10-30   | 5   |                                    | 25 x 2             |                 |  |                                 |  |  |   | 0.03  | 103 | 47 | Yes | 1                           | No     | 349.00   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | AVX-100U<br>(RI)   | D/O  | D               | P   |  | 2F, 2B<br>(or 3F<br>only) | 10-30   | 8   |                                    | 65 x 2,<br>14 x 2  |                 |  |                                 |  |  |   | 0.01  | 120 | 65 | Yes | 2                           | 6      | 699.00   | Digital surround; three-channel<br>operation; video enhancer.  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
|                          | AVC-70(RI)   | D/O  | D               | P   |  | 2F, 2B                    |   | 4   |                                    |                    |                 |  |                                 |  |  |   | 0.005 | 96  |    | Yes | 2                           | 5      | 529.00   |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |
| AVS-90M                  | D/O  | D    |                 |     | 2B                                       |                           | 2   |     | 15 x 2                             |                    |                 |  |                                 |  |  | 0.4   | 70    |     | No | 0   | 5                           | 400.00 | Digital surround.<br>Amplification for rear channels only. |  |                             |  |                        |  |                    |  |                         |  |               |  |           |  |       |  |  |

# A World Of Difference!

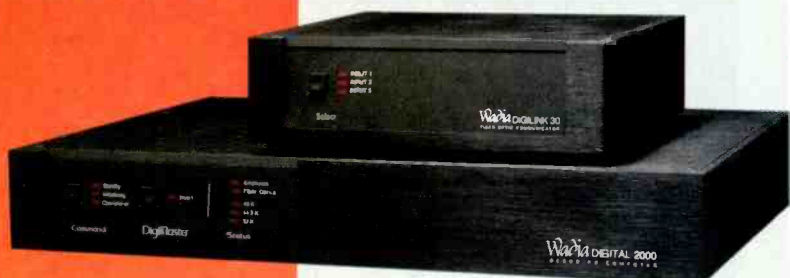
There is indeed a world of difference between conventional D/A processors and the time-domain-optimized Decoding Computers by Wadia.

The difference begins with four high-speed AT&T DSP chips operating in parallel at 36 MegaHz in a powerful CPU that provides 72 million instructions per second capability — equivalent to 100 PCs!

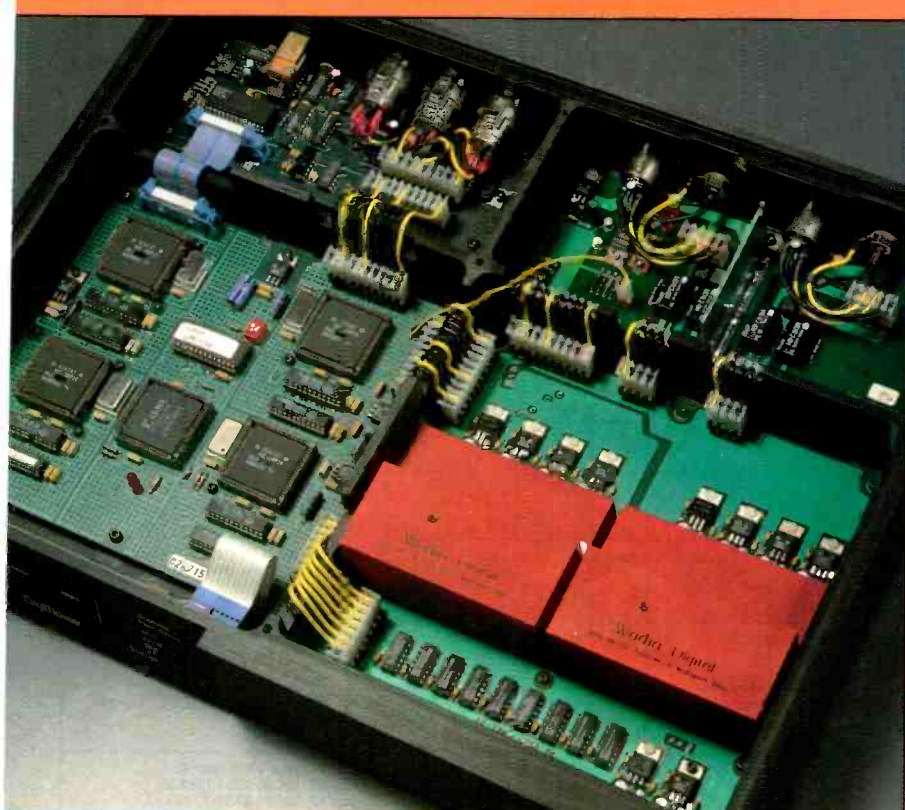
But this is just the beginning . . . .

Wadia's revolutionary new *DigiMaster™* software is augmented by the *Splire* — the only decoding polynomial known that regenerates the slope of the signal as it moves through the sample points. It is two generations beyond conventional brickwall digital filtering in performance. It is optimized in the time-domain — not the frequency-domain — therefore, the impulse response is clean, the intertransient silence is absolute.

The Wadia Digital 2000 Decoding Computer



The photo on the left shows Wadia's internal circuitry, the two large red modules are proprietary 18-bit transversal, multipole DACs. They have been called "BOSS DACs" in the press. This is in sharp contrast to finger-nail sized off-the-shelf commercial DACs, that cannot handle 2.8-million conversions per second (64X oversampling), nor can they produce the dynamic Wadia Sound!



**4X VS. 64X OVERSAMPLING.** The left trace is the DAC output of a 4X oversampled CD player. The signal is an 8 KHz sine wave. Notice that there are 22 steps per cycle. The right-hand trace is the output of the Wadia DAC utilizing 64X oversampling. Notice the smoothness due to the fact that there are 353 steps per 8 KHz cycle.

Wadia's new *Sledgehammer™* output buffer provides 400mA of peak current drive with a 1300 Volts/microsec slew rate for a sound that is rich and solid.

The Wadia enclosures are machined from solid aluminum and heavy plate metal. The integrity and homogeneity of the enclosure is a subtle but important factor in performance. Any cross section of an electronic enclosure is a complex maze of eddy current, ground current and thermodynamic flows.

A World of Difference? A prominent recording engineer said it all — "With the Wadia, CDs have the musicality of the best analog sound, but with the added punch and impact, wide dynamic range, extended bass response, and freedom from noise that makes digital recording so attractive."

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# SIGNAL PROCESSORS

| MANUFACTURER   | Model<br>(RI) = Remote Included,<br>(RO) = Remote Optional | Type of Processing                                 | Function: Closed Loop = C,<br>Open Loop = O, Transient = T | Application: Tape Rec. = R,<br>Phono = P, FM = F, Video = V | Simultaneous Encode/Decode? | Degree of Noise Reduction,<br>dB @ Hz | Record = R, Play = P, Both = RP | THD, % | Frequency Response,<br>Hz to kHz, $\pm$ dB | Price, \$ | Notes  |
|----------------|--|--|--|---|-----------------------------|---------------------------------------|---------------------------------|--------|--|-----------|--|
| ACE AUDIO      | 4000   | Subsonic Filter                                    |  | R/P/F   | No                          | †                                     | RP                              | 0.002  | 20-20 +0,-3                                | 98.50     | †18 dB/octave slope below 20 Hz.   |
|                | 4100   | Infra/Ultrasonic Filter                            |  | R/P/F   | No                          | †                                     | RP                              | 0.002  | 20-20 +0,-3                                | 108.50    | †Low, 18 dB/octave slope; high, 12 dB/octave.  |
|                | 4000-X24   | Infrasonic Filter                                  |  | R/P/F   | No                          | †                                     | RP                              | 0.002  | 20-20 +0,-3                                | 132.00    | †Low, 24 dB/octave slope.  |
|                | 4100-X24   | Infra/Ultrasonic Filter                            |  | R/P/F   | No                          | †                                     | RP                              | 0.002  | 20-20 +0,-3                                | 142.00    | †Low, 24 dB/octave slope; high, 12 dB/octave.  |
| ATHENA         | ML-1 PolyPhasor  | Group Delay/Phase                                  | T  | U   |                             |                                       | RP                              |        | 0.1-40                                     | 575.00    | Works on all line-level sources.   |
|                | ML-5 PolyPhasor  | Group Delay/Phase                                  | T  | U   |                             |                                       | RP                              |        | 0.1-40                                     | 800.00    | For CD players only.   |
|                | ML-10 PolyPhasor   | Group Delay/Phase                                  | T  | U   |                             |                                       | RP                              |        | 0.1-40                                     | 1100.00   | Works on all line-level sources.   |
| AUDIO CONTROL  | Phase Coupled Activator                                    | Proprietary  | O  | U   | No                          |                                       | RP                              | 0.005  | 25-20 $\pm$ 0.5                            | 259.00    | Restores lower frequencies; includes programmable crossover.                               |
| BBE SOUND      | 1002   | †  |  | U   | Yes                         | 85 @ 1k                               | RP                              | 0.05   | 20-20 $\pm$ 1                              | 189.00    | †High-frequency detail enhancement.  |
| CARVER         | H-9AV  | Sonic Hologram Generator                           | O  | U   |                             |                                       | P                               | 0.01   | 1-60 +0,-0.3                               | 299.95    | Independent outputs for L - R and L + R.   |
|                | ECS-U  | Sonic Hologram Generator, Sub-Bass Restoration, EQ | O  | U   |                             |                                       | P                               | 0.01   | 1-60 +0,-0.3                               | 299.95    |  |
| DBX            | 3BX-DS   | Dynamic Range Controller                           | C  | R/P/F   |                             |                                       | RP                              | 0.15   | 20-20 $\pm$ 0.5                            | 499.00    |  |
|                | 1BX-DS   | Dynamic Range Controller                           | C  | R/P/F   |                             |                                       | RP                              | 0.15   | 20-20 $\pm$ 0.5                            | 279.00    |  |
|                | 120X-DS  | Subharmonic Synthesizer                            | C  | R/P/R   |                             |                                       | RP                              | 0.05   | 25-20 $\pm$ 0.1                            | 299.00    |  |
|                | SNR-1  | Single-Ended NR                                    | C  | R/P/F   | Yes                         | 40 dB Max.                            | RP                              | 0.1    | 20-20 $\pm$ 0.5                            | 279.00    |  |
|                | 224X-DS  | dbx Type II NR for Tape                            | C  | R/P/F   |                             | 40 dB Max.                            | RP                              | 0.05   | 40-20 $\pm$ 0.05                           | 299.00    |  |
| ESOTERIC SOUND | Connector  | Signal Routing                                     | O  | R/P/F   |                             |                                       | RP                              |        |  | 225.00    | Adds seven processor/recorder loops; stereo/mono switching.                                |
| FOSTEX         | 3180   | Reverb   | O  | R   |                             |                                       | RP                              | 0.02   | 20-20                                      | 400.00    |  |
| MARCHAND       | WM8  | Bass Correction                                    | O  |   |                             |                                       | P                               | 0.01   | 2-20                                       | 345.00    | For use with subwoofers and full-range speakers.   |
| NEC            | AVX-910(RI)  |  |  | R/V   |                             |                                       | RP                              |        |  | 699.00    | Ten audio inputs, five video inputs; digital freeze frame and noise reduction.             |
| PACKBURN       | 323 A  | Transient, Dynamic NR                              | O/T  | U   | No                          | Varies                                | RP                              | 0.05   | Sel.                                       | 2650.00   | Mono/stereo; has three NR processors.  |
| PIONEER        | EX-9000  | Dynamic Expander                                   | O  | U   |                             | Varies                                | RP                              |        | 20-20                                      | 270.00    | Center frequencies at 50, 500, and 5000 Hz.  |
| SOUND CONCEPTS | IR2100(RI)   | Image Enhancer                                     | O  | U   |                             |                                       | RP                              | 0.01   | 20-25 $\pm$ 0.1                            | 300.00    | Includes wired remote. Kit, Model KIR-1, \$95.00. Kit, Model KVSP-1, \$90.00.              |
|                | IR2200   | Image Enhancer                                     | O  | U   |                             |                                       | RP                              | 0.01   | 20-20 $\pm$ 0.3                            | 189.00    |  |
|                | VSP-1  | Stereo Synthesizer                                 | O  | U   |                             |                                       | RP                              | 0.01   | 20-20 $\pm$ 0.3                            | 169.00    |  |
| SYMETRIX       | 501  | Limiter/Compressor                                 |  | U   |                             |                                       | RP                              | 0.035  | 20-20 +0,-1                                | 279.00    | Two processors, rms compressor and peak limiter.   |
|                | 525  | Dual-Gated Limiter/Compressor                      |  | U   |                             |                                       | RP                              | 0.035  | 20-20 +0,-1                                | 495.00    | Two processors per channel, program-controlled compressor/limiter and expander/noise gate. |
|                | 544  | Expander/Noise Gate                                |  | U   |                             |                                       | RP                              | 0.035  | 20-20 +0,-1                                | 649.00    | Four independent channels; switchable between expansion and gating.                        |
|                | 511A   | Single-Ended NR, Downward Expander                 |  | U   |                             | 30 dB Max.                            | RP                              | 0.035  | 20-20 +0,-1                                | 629.00    | Expander has dynamic filter.   |



—Leonard Feather, Celebrated Jazz Critic for the L.A. Times, Washington Post News Service and Author of many books including "The Jazz Years—Earwitness to an Era."

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A10



# CROSSOVERS

| MANUFACTURER              | Model                    | Type: Active = A, Passive = P, Combined Active & Passive = C | Mono = M, Stereo = S, Other = O | Number of Frequency Bands per Channel | Crossover Frequencies, Hz                                | Independent High- and Low-Pass Frequency Selection? | Variable = V, Fixed = F | Subwoofer Outputs: Stereo = S, Mono = M, Inverted for Mono Bridging = B | Level Controls: High-Pass = H, Midrange = M, Low-Pass = L (Or Total Number of Controls) | S/N Ratio, % | Distortion, % | Nominal Input Level, V | Input Impedance, Ohms | Output Impedance, Ohms | Price, \$   | Notes   |
|---------------------------|--------------------------|--|---------------------------------|---------------------------------------|--|---|-------------------------|---|---|--------------|---------------|------------------------|-----------------------|------------------------|-------------|---|
| ACCUPHASE                 | F-15L                    | A  | S                               | 3                                     | 20-20k   | Yes   | P                       | S   | H/M/L   | 100          | 0.003         | †                      | 20k                   | 100                    | 4200.00     | †8 V maximum. Balanced and unbalanced inputs and outputs (specs shown are unbalanced).  |
| ACE AUDIO                 | 6500-DSB                 | A  | M/S/X                           | 2                                     | 30-200   | Yes   | P                       | S/M   | H or L  | 90           | 0.002         | 1.0                    | 100k                  | 100                    | 175.00      | Optional subsonic filter, \$25.00.  |
|                           | 6000                     | A  | S                               | 2                                     | 200-15k  | Yes   | P                       | S/M   | H or L  | 90           | 0.002         | 1.0                    | 100k                  | 100                    | 175.00      | As above.   |
|                           | 6000-6                   | C  | S                               | 2                                     | 30-18k   | Yes   | P                       | S/M   | H or L  | 90           | 0.002         | 1.0                    | 100k                  | 100                    | 204.00      | As above; transient-perfect filter.   |
| ANALOG RESEARCH           | Custom                   | A  | S                               | 2                                     | Custom   | Yes   | F                       | S   |   | 90           | 0.01          |                        | 10k                   | 100                    | 600.00      | External power supply required.   |
| APOGEE ACOUSTICS          | DAX                      | A  | S                               | 2                                     | 330  | No  | F                       | No  | H/L   | 100          | 0.003         | 1                      | 47k                   | 8                      | 3995.00     | For Apogee Diva, Duetta Signature, and Caliper Signature.   |
| ATC                       | EC23                     | A  | S                               | 3                                     | Custom   | Yes   | P                       | No  | H/L   |              |               | 1.0                    | 10k                   | 47k                    | 1800.00     | Balanced inputs and outputs; adjustable delay on low and high bands; switchable mid-band polarity inversion; adjustable active gain limiting. |
| ATHENA                    | DF-10                    | A  | S                               | 2                                     | 15-15k   | No  | V                       | S   | H/L   | 96           | 0.001         | 1.0                    | 100k                  | 560                    | 1800.00     |   |
|                           | DF-100                   | A  | S                               | 3                                     | 15-15k   | Yes   | V                       | S   | H/M/L   | 96           | 0.001         | 1                      | 100k                  | 560                    | 4000.00     | Custom order.   |
|                           | DF-1000                  | A  | S                               | 4                                     | 15-15k   | Yes   | V                       | S   | 4   | 96           | 0.001         | 1                      | 100k                  | 560                    | 6000.00     | As above.   |
| AUDIO CONTROL             | Phase Coupled Activator  | A  | S                               | 2                                     | 20-20k   |   | P                       | S   | L   | 118          | 0.005         | 1.0                    | 100k                  | 150                    | 259.00      | Proprietary bass restoration circuits; subsonic filter.   |
|                           | Richter Scale Series III | A  | S                               | 2                                     | 20-20k   |   | P                       | S/M/B   | L   | 120          | 0.005         | 1.0                    | 100k                  | 150                    | 349.00      | Linkwitz-Riley alignment; 1/2-octave bass EQ and analyzer (see also "Equalizers").  |
| BIAMP SYSTEMS             | SX23                     | A  | M/S                             | †                                     | 100-1k, 1k-10k   | No  | V                       | No  | H/L   | 85           | 0.015         | .775                   | 10k                   | 150                    | 499.00      | †Usable as stereo 2-way or mono 3-way.  |
| BRYSTON                   | 10B                      | A  | M/S                             | †                                     | 70, 100, 140, 200, 300, 400, 700, 1k, 1.4k, 2k, 3k, 4.5k | Yes   | S                       |   | H   | 90           | 0.005         | 1                      | 20k                   | 100                    | 995.00      | †Usable as stereo 2-way, mono 2-way, or mono 3-way. With optional balanced inputs and outputs, \$1195.00.                                     |
| CARVER                    | AV-64                    | A  | M                               | 2                                     | 75   | No  | P                       | M   | H/L   | 110          | 0.05          | 0.75                   | 10k                   | 100                    | 759.95      | Includes amplifier, 60 watts x 4 or 60 watts x 2 plus 120 watts x 1.  |
| CROWN INTERNATIONAL       | FFX-2                    | A  | X                               | 2                                     | 20-20k   | Yes   | S                       | M   |   | 100          | 0.05          |                        | 20k                   | 600                    | 345.00      |   |
| CSI                       | LE-1                     | A  | M/O                             | 1                                     | 30-200   | Yes   | S/P                     | M   | L   | 92           | 0.02          | 0.50                   | 300k                  | 1k                     | 690.00      | ELF system; low-pass only.  |
|                           | HLE-1                    | A  | M/O                             | 2                                     | 30-200   | Yes   | S/P                     | M/B   | 6   | 92           | 0.02          | 0.50                   | 10k                   | 600                    | 1390.00     | ELF system.   |
|                           | HLE-2                    | A  | S/O                             | 2                                     | 30-200   | Yes   | S/P                     | S/M/B   | 12  | 92           | 0.02          | 0.50                   | 10k                   | 600                    | 1990.00     | As above.   |
| DB SYSTEMS                | DB-3-18                  | A  | S/X                             | 2, 3                                  | Optional   | Yes   | F                       | S/M/B   | H/M/L   | 100          | 0.0008        | 1                      | 90k                   | 1.4k                   | From 400.00 | 18-dB/octave slope; 6 or 12 dB available.   |
|                           | DB-3-24                  | A  | S/X                             | 2                                     | Optional   | Yes   | F                       | S/M/B   | H/L   | 100          | 0.0008        | 1                      | 90k                   | 1.4k                   | 575.00      | Linkwitz-Riley alignment.   |
|                           | DB-3-36                  | A  | S/X                             | 2                                     | Optional   | Yes   | F                       | S/M/B   | H/L   | 100          | 0.0008        | 1                      | 90k                   | 1.4k                   | 650.00      | 36-dB/octave slope.   |
| DeCOURSEY                 | 120-B4                   | A  | M/S/X                           | 2                                     | Optional   | Yes   | P                       | S/M/B   | Opt.  | 90           | 0.002         | 1                      | 100k                  | 100                    | 167.50      | Optional rack and panel; optional summing circuit and subsonic filters.   |
|                           | 120-T8                   | A  | M/S/X                           | 3                                     | Optional   | Yes   | P                       | S/M/B   | Opt.  | 90           | 0.002         | 1                      | 100k                  | 100                    | 262.50      | As above.   |
|                           | 120-Q8                   | A  | M/S/X                           | 4                                     | Optional   | Yes   | P                       | S/M/B   | Opt.  | 90           | 0.002         | 1                      | 100k                  | 100                    | 352.50      | As above.   |
| DYNAMIC ELECTRO ACOUSTICS | Music Box                | A  | S                               |                                       | 35   | No  | F                       | No  | No  | 95           | 0.008         | 0.75                   | 28k                   | 400                    | 199.00      |   |
| EXPOSURE                  | V-2                      | A  | S                               | 2                                     | Custom   |   | F                       |   | H/L   |              |               |                        |                       |                        | 1175.00     | Requires power supply.  |
|                           | V-3                      | A  | S                               | 3                                     | Custom   |   | F                       |   | H/M/L   |              |               |                        |                       |                        | 1175.00     | As above.   |
| FM ACOUSTICS              | 236-X100                 | A  | S                               | 2                                     | 60-16k   | Yes   | P                       | S   | H/L   | 110          | 0.008         | 0.75                   | 60k                   | 1                      | 5880.00     | Linear phase, Class A; 36-dB/octave slope.  |
|                           | 236-X100B                | A  | S                               | 2                                     | 60-16k   | Yes   | P                       | S   | H/L   | 110          | 0.008         | 0.75                   | 60k                   | 1                      | 6840.00     | As above.   |
|                           | 236/4-4                  | A  | M                               | 4                                     | 60-16k   | Yes   | P                       |   | 6   | 110          | 0.008         | 0.75                   | 60k                   | 1                      | 5980.00     | As above.   |
|                           | 236/4-3                  | A  | M                               | 3                                     | 60-16k   | Yes   | P                       |   | H/M/L   | 110          | 0.008         | 0.75                   | 60k                   | 1                      | 5280.00     | As above.   |
| GOLD SOUND                | GS224                    | A  | S                               | 2                                     | 40-4.2k  | No  | V                       | S   | 6   | 102          | 0.02          | 0.75                   | 20k                   | 300                    | 324.00      | 24-dB/octave slope.   |
|                           | GS224EQ                  | A  | S                               | 2                                     | 40-4.2k  | No  | V                       | S/M   | 6   | 102          | 0.02          | 0.75                   | 20k                   | 300                    | 384.00      | As above; fixed bass EQ and subsonic filter.  |
|                           | GS424                    | A  | S/O                             | †                                     | 40-9k  | No  | V                       | S   | 12  | 102          | 0.02          | 0.75                   | 20k                   | 300                    | 424.00      | †Usable as stereo 2-way or four channel 2-way. With fixed bass EQ and subsonic filter, Model GS424EQ, \$484.00.                               |


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# CROSSOVERS

| MANUFACTURER      | Model                             | Type: Active = A, Passive = P, Combined Active & Passive = C | Mono = M, Stereo = S, Series with Mono Subwoofer Output = X, Other = O | Number of Frequency Bands per Channel | Crossover Frequencies, Hz        | Independent High- and Low-Pass Frequency Selection? | Variable = V, Plug-in Modules = P | Subwoofer Outputs Stereo = S, Mono = M, Inverted for Mono Bridging = B | Level Controls: High-Pass = H, Midrange = M, Low-Pass = L (for Total Number of Controls) | S/N Ratio, — dB | Distortion, %  | Nominal Input Level, V | Input Impedance, Ohms | Output Impedance, Ohms | Price, \$             | Notes  |
|-------------------|-----------------------------------|--|--|---------------------------------------|----------------------------------|---|-----------------------------------|--|--|-----------------|----------------|------------------------|-----------------------|------------------------|-----------------------|--|
| JANIS             | Interphase 1A<br>Interphase 3/A   | A<br>A   | X<br>X   | 2<br>2                                | 100<br>100                       | No<br>No  | F<br>F                            | M<br>M   | L<br>L   | 98<br>96        | 0.01<br>0.02   | 0.60<br>0.60           | 200k<br>200k          | 100<br>100             | 750.00<br>†           | Integral 100-watt bass amp. †Included with Model 3/A subwoofer. As above but 50 watts.   |
| JBL               | 8X63A                             | C  | X  |                                       | 63-125                           |   | V                                 | M/B  | L  | 90              | 0.01           |                        | 180                   | 379.00                 |                       | Amp bridging capability; woofer impedance matching.  |
| JRM               | 3BPB/X8                           | A  | O  | 4                                     | 75-600, 180-1.5k,<br>1.2k-10k    | Yes   | P                                 | S/M/B  | 8†   | 110             | 0.01           | Sel.                   | 20k                   | 100                    | 750.00                | †0.5-dB steps. Cascaded 18-dB/octave filters; stereo and bridging outputs for all sections; infrasonic and ultrasonic filters; low-frequency EQ optional. †As above. |
|                   | 3BPB/X4                           | A  | O  | 2                                     | Optional                         | Yes   | P                                 | S/M/B  | 4†   | 110             | 0.01           | Sel.                   | 20k                   | 100                    | 450.00                |  |
| KINETIC AUDIO     | Three-Point<br>Four-Point         | P<br>P   | M<br>M   | †<br>†                                | 60/90/180<br>60/90/180/350       | Yes<br>Yes  | S<br>S                            | M<br>M   | H/M<br>H/M   | 95<br>95        | 0.01<br>0.01   |                        | 8<br>8                | Var.<br>Var.           | 150.00<br>150.00      | †High-pass only.<br>†Low-pass only.  |
| KRELL             | KRX-2<br>KRX-3                    | A<br>A   | S/M<br>S/M   | 3<br>2                                | Variable<br>Variable             | Yes<br>Yes  | S<br>P                            | S<br>S   | H/M/L<br>H/L   | 120<br>120      | 0.001<br>0.001 | 0.5<br>0.5             | 100k<br>100k          | 10<br>10               | 3000.00<br>2000.00    | For specific speakers.   |
| LEGACY            | Signature Electronic<br>Crossover | A  | S  | 2                                     | 20-5k                            | No  | V                                 | S  | H/L  | 100             | 0.01           | 0.75                   | 50k                   | 100                    | 796.00                | 24-dB/octave slope; Linkwitz-Riley alignment; digital frequency display.   |
| MARK LEVINSON     | LNC-2                             | A  | M/S  | †                                     | 20-20k                           | Yes   | P                                 | S  | H/M/L  | 102             | 0.002          |                        | 10k                   |                        | 3500.00               | †Usable as stereo 2-way or mono 3-way.   |
| LINN HI-FI        | Aktiv                             | A  | S  | 3                                     | 375, 3k                          | No  | F                                 |  |  |                 |                |                        |                       |                        | 1995.00               | For Linn DMS.  |
| MADISOUND         | 24CX-2                            | A  | M/S  | †                                     | 60-7k                            | No  | V                                 | S/M  | H/L  | 108             | 0.01           | 1.95                   | 20k                   | 300                    | 499.00                | †Usable as stereo 2-way or mono 3-way. Linkwitz-Riley alignment.   |
|                   | 24CX-4                            | A  | M/S  | †                                     | 60-700, 600-7k                   | No  | V                                 | S/M  | H/M/L  | 108             | 0.01           | 1.95                   | 20k                   | 300                    | 599.00                | †Usable as stereo 3-way, mono 5-way, or four channel 2-way. Alignment as above.  |
| MARCHAND          | XM6<br>XM1                        | A<br>A   | S/X<br>M   | 2<br>2                                | 20-5k<br>53-5k                   | No<br>No  | V<br>P                            | S/M/B  | H/L  | 110<br>110      | 0.01<br>0.01   | 4.0<br>8.0             | 50k<br>100k           | 20<br>100              | 495.00<br>23.95       | 24-dB/octave slope. As above.  |
| M & K             | LP-1S                             | P  | S  | †                                     | 100                              | No  | F                                 | S  | H/L  |                 |                |                        |                       |                        | 325.00                | †High-pass only, to match low-pass filter in M & K powered subwoofers. Line level.   |
|                   | VF-100                            | P  | S  | †                                     | 100                              | No  | F                                 | S  |  |                 |                |                        |                       |                        | 75.00                 | As above.  |
| MUSIC REFERENCE   | RM-3                              | A  | S  | 2                                     | 20-20k                           | Yes   | P                                 | S  | H/L  | 100             | 0.001          | 0.5                    | 100k                  | 600                    | 1200.00               | Selectable filter slopes.  |
| NAIM AUDIO        | NAX03-6<br>NAX02-4                | A<br>A   | S<br>S   | 3<br>2                                | Custom<br>Custom                 | Yes<br>Yes  | F<br>F                            |  | H/M/L<br>H/L   | 90<br>90        | 0.1<br>0.1     | 1<br>1                 | 20k<br>20k            | 47<br>47               | 995.00<br>995.00      | Requires power supply. As above.   |
| NELSON-REED       | AC 1204                           | C  | S  | 2                                     | 65                               |   | F                                 | S/M  | L  | 118             | 0.007          | 1                      | 22k                   | 100                    | 620.00                | For Nelson-Reed 1204 or Tower subwoofers.  |
| NESTOROVIC LABS   | NL12A                             | A  | S  | 2                                     | 200                              | No  | F                                 | S  | H/L  | 90              | 0.01           | 1                      | 50k                   | 100                    | 850.00                |  |
| PAC               | C.P.R.                            | C  | S  | 2                                     | 50-250                           | Yes   | V                                 | S/M  | L  | 100             | 0.01           | .775                   | 50k                   | 100                    | 1295.00               |  |
| ROGERS            | AF510                             | A  | M  |                                       |                                  |   |                                   |  |  |                 |                |                        |                       |                        | 599.00                |  |
| SESCOM            | PD-51                             | A  | M  | 3                                     | 20-20k                           | Yes   | P                                 | No   | No   | 87              | 0.01           | 0.75                   | 100k                  | 100                    | 133.10                | Requires PD-1 power supply, \$71.40.   |
| SONOGRAPHE        | SX-1                              | A  | S  | 2                                     | 110                              | No  | F                                 | S/M  | L  |                 |                | 0.75                   |                       |                        | 495.00                |  |
| SOUND ENGINEERING | PFM-9                             | A  | X  | 3                                     | 40-160, 400-3.2k                 | No  | S/V                               | S/M  | L/†  | 118             | 0.03           | Var.                   | 20k                   | 50                     | 1750.00               | †Subwoofer.  |
| SUMO              | Delilah                           | A  | S/X  | 2                                     | 50, 63, 80, 100, 125             | Yes   | S                                 | S/B  | L  | 95              | 0.007          | 2                      | 50k                   | 100                    | 549.00                |  |
| THRESHOLD         | PCX<br>PCX x10                    | A<br>A   | S/X<br>S/X   | 2<br>2                                | 75-1.6k<br>750-16k               | No<br>No  | P<br>P                            | S/M/B<br>S/M/B   | H/L<br>H/L   | 98<br>98        | 0.01<br>0.01   |                        | 20k<br>20k            | 1.5k<br>1.5k           | 1600.00<br>1600.00    | 18-dB/octave slopes sum flat without phase inversion. As above.  |
| VINTEC ACOUSTICS  | Vertex                            | P  | S  | 2                                     | 90                               |   | F                                 | S  |  |                 |                |                        |                       |                        | 400.00                | Computer-aided filter design.  |
| WESTLAKE AUDIO    | HR-X/1X/7X,<br>SM-1X<br>MRX-2     | A<br>A   | S<br>S   | 4<br>2                                | Custom, 50-10k<br>Custom, 50-10k | No<br>Yes   | F<br>P                            |  | 5<br>H/L   | 106<br>105      | 0.004<br>0.01  | 0.77<br>0.77           | 10k<br>10k            | 100<br>1k              | 8573.00<br>To 3600.00 |  |

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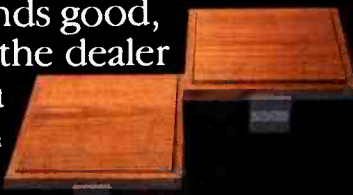
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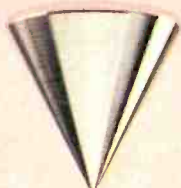


# HI-FI VCRs

| MANUFACTURER    | Model           | Format     |   | Standard Audio Tracks: Mono = M, Stereo = S, Stereo with Dolby NR=D | Frequency Response, Hz to kHz, $\pm$ dB | Audio S/N Ratio, -dB, re 0 dB | THD, % | Separation, dB, at 1 kHz | Simultast Recording? | Dynamic Range, dB | Wow & Flutter, Wtd. Peak, % | Stereo TV (M/S Sap) Capability: Built into Tuner = 1, Decoder Jack = J | Programmability: Number of Days/Number of Events | Audio Dubbing? | Phone Jack? | Volume Control on Phone Jack? | Number of Tape Speeds, Record/Play | Price, \$ |
|-----------------|-----------------|------------|---|---|---|-------------------------------|--------|--------------------------|----------------------|-------------------|-----------------------------|--|--|----------------|-------------|-------------------------------|------------------------------------|-----------|
| AIWA            | HV-90           | VHS HQ     | S | 20-20 $\pm$ 3   | 75 dBA                                  | 0.55                          | 60     | Yes                      | 85                   | 0.005             | B                           | 14/6   |  | Yes            | Yes         | 3/3                           |                                    | 699.00    |
| BANG & OLUFSEN  | Beocord VX5000  | S-VHS HQ   | S | 20-20 $\pm$ 3   | 80                                      | 0.5                           | 55     | Yes                      | 80                   | 0.005             | B                           | 365/8  | Yes  | Yes            | No          | 2/3                           |                                    | 1995.00   |
| FISHER          | FVH-Z1          | S-VHS HQ   | M | 20-20 $\pm$ 3   | 90 dBA                                  | 0.3                           | 50     | Yes                      | 90                   | 0.005             | B                           | 365/6  | Yes  | Yes            | Yes         | 3/3                           |                                    | 1299.95   |
|                 | FVH-S6800       | S-VHS      | M | 20-20 $\pm$ 3   | 90 dBA                                  | 0.4                           | 45     | Yes                      | 90                   | 0.005             | B                           | 365/6  | Yes  | Yes            | Yes         | 3/3                           |                                    | 899.95    |
|                 | FVH-6600        | VHS        | M | 20-20 $\pm$ 3   | 90 dBA                                  | 0.4                           | 45     | Yes                      | 90                   | 0.005             | B                           | 21/6   | Yes  | No             |             | 3/3                           |                                    | 499.95    |
| GRUNDIG         | VS-9500         | VHS HQ     | D | 20-20 +0.3  | 90 dBA                                  | 0.005                         | 60     | Yes                      | 90                   | 0.02              | B                           | 31/8   | Yes  | Yes            | No          | 3/3                           |                                    | 799.00    |
|                 | VS-900          | VHS HQ     | D | 20-20 +0.3  | 90                                      | 0.005                         | 60     | Yes                      | 90                   | 0.02              | B                           | 31/8   | No   | No             |             | 3/3                           |                                    | 549.00    |
| HITACHI         | VT-3800A        | S-VHS HQ   | M | 20-20 $\pm$ 3   | 70                                      | 0.3                           | 60     | Yes                      | 90                   | 0.005             | B                           | 365/8  | Yes  | Yes            | Yes         | 2/3                           |                                    | 1299.95   |
|                 | VT-S730A        | S-VHS HQ   | M | 20-20 $\pm$ 3   | 70                                      | 0.3                           | 60     | Yes                      | 90                   | 0.005             | B                           | 365/8  | Yes  | Yes            | Yes         | 2/3                           |                                    | 1099.95   |
|                 | VT-F430A        | VHS HQ     | M | 20-20 $\pm$ 3   | 70                                      | 0.3                           | 60     | Yes                      | 90                   | 0.005             | B                           | 365/8  | Yes  | Yes            | Yes         | 3/3                           |                                    | 699.95    |
|                 | VT-F330A        | VHS HQ     | M | 20-20 $\pm$ 3   | 70                                      | 0.3                           | 60     | Yes                      | 90                   | 0.005             | B                           | 365/8  | No   | Yes            | Yes         | 3/3                           |                                    | 549.95    |
| JVC             | HR-S5500U       | S-VHS HQ   | S | 20-20 +0.3  | 75 dBA                                  | 0.4                           | 60     | Yes                      | 90                   | 0.005             | B                           | 14/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1299.00   |
|                 | HR-S6600U       | S-VHS HQ   | S | 20-20 +0.3  | 75 dBA                                  | 0.4                           | 60     | Yes                      | 90                   | 0.005             | B                           | 14/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1499.00   |
|                 | HR-S10000U      | S-VHS HQ   | S | 20-20 +0.3  | 75 dBA                                  | 0.4                           | 60     | Yes                      | 90                   | 0.005             | B                           | 14/8   | Yes  | Yes            | Yes         | 2/3                           |                                    |           |
|                 | HR-S8000U       | S-VHS HQ   | S | 20-20 +0.3  | 75 dBA                                  | 0.4                           | 60     | Yes                      | 90                   | 0.005             | B                           | 14/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1599.00   |
|                 | HR-S5000U       | S-VHS HQ   | S | 20-20 +0.3  | 75 dBA                                  | 0.4                           | 60     | Yes                      | 90                   | 0.005             | B                           | 14/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1299.00   |
|                 | HR-D850U        | VHS HQ     | S | 20-20 +0.3  | 75 dBA                                  | 0.4                           | 60     | Yes                      | 90                   | 0.005             | B                           | 14/8   | No   | Yes            | Yes         | 2/3                           |                                    | 899.00    |
|                 | HR-D840U        | VHS HQ     | S | 20-20 +0.3  | 75 dBA                                  | 0.4                           | 60     | Yes                      | 90                   | 0.005             | B                           | 14/8   | No   | Yes            | Yes         | 2/3                           |                                    | 849.00    |
| MINOLTA         | MV-160S         | S-VHS HQ   | M | 20-20   |   |                               |        | Yes                      | 80                   | 0.005             | B                           | 365/8  | Yes  | Yes            | Yes         | 3/3                           |                                    | 1530.00   |
|                 | MV-140S         | VHS HQ     | M | 20-20   |   |                               |        |                          | B                    | 365/8             |                             | No   | Yes  | Yes            | Yes         | 3/3                           |                                    | 835.00    |
| MITSUBISHI      | HS-U51          | VHS HQ     | M | 20-20   | 78                                      | 0.3                           | 60     | No                       | 90                   | 0.005             | B                           | 31/8   | No   | No             | Yes         | 2/3                           |                                    | 599.00    |
|                 | HS-U61          | S-VHS HQ   | M | 20-20   | 82                                      | 0.3                           | 60     | No                       | 90                   | 0.005             | B                           | 31/8   | No   | Yes            | Yes         | 2/3                           |                                    | 899.00    |
|                 | HS-U71          | S-VHS HQ   | M | 20-20   | 82                                      | 0.3                           | 60     | No                       | 90                   | 0.005             | B                           | 31/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1199.00   |
|                 | HS-U80          | S-VHS HQ   | M | 20-20   | 82                                      |                               | Yes    | 90                       | 0.005                | B                 | 31/8                        | Yes  | Yes  | Yes            | Yes         | 2/3                           |                                    | 1699.00   |
| NEC             | DS8000U Mark II | S-VHS HQ   | M | 20-20   | 90                                      | 1                             | 70     | Yes                      | 90                   | 0.01              | B                           | 21/8   | No   | Yes            | Yes         | 2/3                           |                                    | 1499.00   |
|                 | N979U           | VHS HQ     | M | 20-20   | 90                                      | 1                             | 70     | Yes                      | 90                   | 0.01              | B                           | 21/8   | No   | Yes            | Yes         | 3/3                           |                                    | 899.00    |
|                 | N959U           | VHS HQ     | M | 20-20   | 90                                      | 1                             | 70     | Yes                      | 90                   | 0.01              | B                           | 14/4   | No   | No             |             | 3/3                           |                                    | 699.00    |
| PANASONIC       | PV-4960         | VHS HQ     | S | 20-20   |   |                               |        | Yes                      | 90                   | 0.005             | B                           | 30/8   | Yes  | Yes            | Yes         | 3/3                           |                                    | 579.00    |
|                 | PV-4970         | VHS HQ     | S | 20-20   |   |                               |        | Yes                      | 90                   | 0.005             | B                           | 30/8   | Yes  | Yes            | Yes         | 3/3                           |                                    | 799.00    |
|                 | PV-S4980        | S-VHS HQ   | S | 20-20   |   |                               |        | Yes                      | 90                   | 0.005             | B                           | 30/8   | Yes  | Yes            | Yes         | 3/3                           |                                    | 899.00    |
|                 | PV-S4990        | S-VHS      | S | 20-20   |   |                               |        | Yes                      | 90                   | 0.005             | B                           | 30/8   | Yes  | Yes            | Yes         | 3/3                           |                                    | 1599.00   |
| PHILIPS         | VR6595          | VHS HQ     | S | 20-20   | 70                                      | 0.3                           | 60     | No                       | 90                   | 0.015             | B                           | 31/8   | No   | No             |             | 2/3                           |                                    | 549.00    |
|                 | VR6695          | VHS HQ     | S | 20-20   | 70                                      | 0.3                           | 60     | Yes                      | 90                   | 0.015             | B                           | 31/8   | No   | No             |             | 2/3                           |                                    | 599.00    |
|                 | VR6895          | S-VHS HQ   | S | 20-20   | 70                                      | 0.3                           | 60     | Yes                      | 90                   | 0.015             | B                           | 31/8   | No   | Yes            | Yes         | 3/3                           |                                    | 1099.00   |
|                 | VR6995          | S-VHS HQ   | S | 20-20   | 70                                      | 0.3                           | 60     | Yes                      | 90                   | 0.015             | B                           | 31/8   | Yes  | Yes            | Yes         | 3/3                           |                                    | 1799.00   |
| PIONEER         | VH-930SD        | S-VHS HQ   | S | 20-20   |   |                               | 60     | Yes                      | 90                   |                   | B                           | 21/8   | Yes  | Yes            | Yes         | 3/3                           |                                    | 1500.00   |
| SANYO           | VHR9500         | VHS HQ     | M | 8-52 +0.3   | 78 dBA                                  | 0.57                          | 72     | Yes                      | 80                   | 0.032             | B                           | 21/6   | No   | No             |             | 3/3                           |                                    | 429.95    |
|                 | VHR9600         | VHS HQ     | M | 8-52 +0.3   | 78 dBA                                  | 0.57                          | 72     | Yes                      | 80                   | 0.032             | B                           | 21/6   | No   | No             |             | 3/3                           |                                    | 499.95    |
| SHARP           | VC-G980UA       | VHS HQ     | M | 20-20   | 90                                      |                               |        | Yes                      | 90                   | 0.005             | B                           | 365/8  | No   | Yes            | Yes         | 3/3                           |                                    | 649.95    |
|                 | VC-G990UA       | S-VHS HQ   | M | 20-20   | 90                                      |                               |        | Yes                      | 90                   | 0.005             | B                           | 365/8  | No   | Yes            | Yes         | 2/2                           |                                    | 999.95    |
|                 | VC-H857U        | VHS HQ     | M | 20-20   | 47                                      | 0.5                           |        | Yes                      | 90                   | 0.005             | B                           | 365/8  | No   | Yes            | Yes         | 3/3                           |                                    |           |
|                 | VC-H860U        | VHS HQ     | M | 20-20   | 47                                      | 0.5                           |        | Yes                      | 90                   | 0.005             | B                           | 365/8  | No   | No             |             | 3/3                           |                                    |           |
| SONY            | SLV-757         | VHS HQ     | M | 20-20   | 40                                      | 0.005                         |        | No                       | 90                   |                   | B                           | 31/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1200.00   |
|                 | SLV-555         | VHS HQ     | M | 20-20   | 40                                      | 0.005                         |        | No                       | 90                   |                   | B                           | 31/8   | No   | Yes            | Yes         | 2/3                           |                                    | 750.00    |
|                 | SL-HF870D       | Super Beta | M | 20-20   | 40                                      | 0.005                         |        | No                       | 90                   |                   | B                           | 7/6  | No   | Yes            | Yes         | 2/3                           |                                    | 1100.00   |
| SYMPHONIC       | 8800            | VHS        | M | 20-20   | 80                                      | 1.0                           | 55     | Yes                      | 80                   | 0.01              | B                           | 14/6   | Yes  | Yes            | Yes         | 3/3                           |                                    | 549.95    |
| TEAC            | MV-550          | VHS HQ     | S | 20-20   | 80                                      |                               |        | Yes                      |                      |                   | B                           | 14/6   |  | Yes            | Yes         | 3/3                           |                                    | 550.00    |
| TOSHIBA         | M-9485          | VHS HQ     | S | 20-20 +0.3  | 60                                      | 0.005                         | 65     | Yes                      | 90                   | 0.005             | B                           | 14/4   | Yes  | Yes            | Yes         | 2/3                           |                                    | 599.00    |
|                 | SV-970          | S-VHS HQ   | S | 20-20 +0.3  | 60                                      | 0.005                         | 66     | Yes                      | 90                   | 0.005             | B                           | 14/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1199.00   |
|                 | SV-F990         | S-VHS HQ   | S | 20-20 +0.3  | 63                                      | 0.005                         | 68     | Yes                      | 90                   | 0.005             | B                           | 14/8   | Yes  | Yes            | Yes         | 2/3                           |                                    | 1999.00   |
| VECTOR RESEARCH | V-6040D         | VHS HQ     | S | 20-20 $\pm$ 2   | 90                                      | 0.005                         | 65     | Yes                      | 90                   | 0.005             | B                           | 14/4   | No   | Yes            | Yes         | 2/3                           |                                    | 999.99    |
| ZENITH          | VRF300HF        | VHS HQ     | M | 20-20 +0.3  | 40                                      | 0.08                          | 60     | Yes                      | 80                   | 0.008             | B                           | 14/8   | No   | No             |             | 2/3                           |                                    | 499.00    |
|                 | VRF510HF        | VHS HQ     | M | 20-20 +0.3  | 40                                      | 0.08                          | 60     | Yes                      | 80                   | 0.008             | B                           | 14/8   | No   | No             |             | 2/3                           |                                    | 599.00    |
|                 | VRF610HF        | VHS HQ     | M | 20-20 +0.3  | 40                                      | 0.08                          | 60     | Yes                      | 80                   | 0.008             | B                           | 14/8   | No   | No             |             | 2/3                           |                                    | 699.00    |
|                 | VRE550HF        | S-VHS HQ   | M | 20-20 +0.3  | 40                                      | 0.08                          | 60     | Yes                      | 90                   | 0.008             | B                           | 14/8   | No   | Yes            | No          | 2/3                           |                                    | 999.00    |

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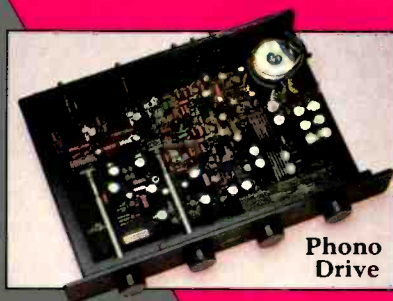
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# LOUDSPEAKERS

| MANUFACTURER       | Model                             |                           | Design Principle, Enclosure or System Type |       | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type  | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Super Tweeter = ST | Analogic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish                  | Grille Color and Material | Weight, Lbs. | Price, \$ |
|--------------------|-----------------------------------|---------------------------|--|-------|-------------------------|---------------------------|---------------|--------------------------|---------------|--|--|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------------------|---------------------------|--------------|-----------|
| ACOUSTAT           | Spectra 11                        | ES                        | 8  |       |                         |                           |               | ES                       |               | 45-20 $\pm$ 3  | 75   | 250                     | 8/3                               | 72 x 15 x 3               | Opt.                             | Opt.                                 |                         |                           | 999.00 Pair  |           |
|                    | Spectra 44                        | ES                        |  |       |                         |                           |               | ES                       |               | 28-20 $\pm$ 3  | 100  |                         | 4/3                               | 94 x 23 x 4               | Opt.                             | Opt.                                 | 220 Pair                | 3300.00 Pair              |              |           |
|                    | Spectra 66                        | ES                        |  |       |                         |                           |               | ES                       |               | 26-20 $\pm$ 3  | 100  |                         | 6/3                               | 94 x 33 x 4               | Opt.                             | Opt.                                 | 294 Pair                | 5500.00 Pair              |              |           |
|                    | Spectra 22                        | ES                        |  |       |                         |                           |               |                          |               | 30-20 $\pm$ 3  | 100  |                         | 4/3                               | 66 x 22 x 2               | Opt.                             | Opt.                                 | 165 Pair                | 1850.00 Pair              |              |           |
|                    | Spectra 33                        | ES                        |  |       |                         |                           |               |                          |               | 30-20 $\pm$ 3  | 100  |                         | 4/3                               | 66 x 33 x 2               | Opt.                             | Opt.                                 | 205 Pair                | 2250.00 Pair              |              |           |
|                    | SP Woofer                         | Vented Subwoof.           | (4)6 1/2                                   |       |                         |                           |               |                          |               | 30-20 $\pm$ 2  | 100  | 100                     |                                   |                           | Opt.                             | Opt.                                 | 55                      |                           |              |           |
|                    | One                               | ES Sat. & Subwoof.        | 10   |       |                         |                           |               | T                        |               | 30-18 $\pm$ 3  | 75   | 160                     | 4/3                               | Three Pieces              | Opt.                             | Opt.                                 | 180 Sys.                | 1299.00 Sys.              |              |           |
|                    | One + One                         | ES                        |  |       |                         |                           |               | T                        |               | 30-20 $\pm$ 2  | 70   |                         | 4/3                               | 94 x 11 x 4               | Opt.                             | Opt.                                 | 144 Pair                | 1750.00 Pair              |              |           |
| ACOUSTIC INTERFACE | Angstrom                          | Ac. Sus.                  | 6 1/2                                      |       |                         | 1                         | Dome          |                          |               | 78-20 $\pm$ 2.5  | 90   | 15                      | 5k                                | 8/6                       | 13 x 7 x 6                       | Black Enam.                          | Black Cloth             | 10                        | 125.00       |           |
|                    | Tremor                            | Vented Subwoof.           | 2(12)                                      |       |                         |                           |               | M, T                     |               | 29-200 $\pm$ 2.5   | 95   | 15                      | 100                               | 8/6                       | 62 x 26 x 16                     | Oiled Wal.                           | Black Cloth             | 150                       | 1090.00      |           |
|                    | Shadow                            | Ac. Sus.                  | 8  |       |                         | 1                         | Dome          |                          |               | 69-20 $\pm$ 2.5  | 91   | 15                      | 5k                                | 8/6                       | 25 x 9 x 9                       | Black Cloth                          | Black Cloth             | 18                        | 190.00       |           |
|                    | Intimate                          | Ac. Sus.                  | 10   |       |                         | 1                         | Dome          | T                        |               | 49-20 $\pm$ 2.5  | 93   | 15                      | 5k                                | 8/6                       | 19 x 12 x 12                     | Oiled Wal.                           | Black Cloth             | 29                        | 290.00       |           |
|                    | Transcendant                      | Vented                    | 12   | 1 1/4 | Dome                    | 1 1/4                     | Dome          | M, T                     |               | 38-20 $\pm$ 2.5  | 94   | 15                      | 1.9k                              | 8/6                       | 24 x 16 x 14                     | Oiled Wal.                           | Black Cloth             | 51                        | 490.00       |           |
|                    | Professional Series II            | Vented                    | 12   | 2     | Dome                    | 1                         | Dome          | M, T                     |               | 29-20 $\pm$ 2.5  | 95   | 15                      | 800, 6.6k                         | 8/6                       | 36 x 16 x 19                     | Oiled Wal.                           | Black Cloth             | 80                        | 890.00       |           |
|                    | Studio Reference                  | Vented                    | 12   | 4x15  | Horn                    | 2x5 1/2                   | Horn          | M, T                     |               | 22-20 $\pm$ 2.5  | 98   | 15                      | 880, 5k                           | 8/6                       | 48 x 16 x 19                     | Oiled Wal.                           | Black Cloth             | 102                       | 1590.00      |           |
|                    | Sound Portal                      | Horn                      | 24x32                                      | 24    | Horn                    | 5x6                       | Horn          | M, T                     |               | 15-20 $\pm$ 2.5  | 101  | 15                      | 800, 5k                           | 8/6                       | 72 x 26 x 24                     | Oiled Wal.                           | Black Cloth             | 175                       | 5000.00      |           |
| Sound Prism        | Triamped, Horn                    | 24x52                     | 26   | Horn  | 3x7 1/4                 | Horn                      | M, T          |                          | 10-20 $\pm$ 1 | 105  | 300, 1.5k Inc.                                   | 8/6                     | 80 x 27 x 36                      | Oiled Wal.                | None                             | 1000 Pair                            | 30,000.00 Pair          |                           |              |           |
| ADC                | SS3010                            | Pas. Rad.                 | 4  |       |                         | 1/2                       | Dome          |                          |               | 85-24 $\pm$ 3  | 88   | 10                      | 5k                                | 6/                        | 11 x 7 x 6                       | Gray Plast.                          | Black Knit              | 5 1/2                     | 269.95 Pair  |           |
|                    | SS3015                            | Subwoof.                  | 8  |       |                         |                           |               |                          |               | 41-165 $\pm$ 3   | 88   |                         | 110                               | 4/                        | 11 x 8 x 17                      | Black Vinyl                          | Gray Plast.             | 15 1/2                    | 229.95       |           |
|                    | SS3025                            | Sat. & Subwoof.           | 4, 8                                       |       |                         | 1/2                       | Dome          |                          |               | 41-24 $\pm$ 3  | 88   |                         | 110, 5k                           | 6/4                       | Three Pieces                     | Gray Plast., Black Vinyl             | Black Knit, Gray Plast. | 26 1/2 Sys.               | 499.95 Sys.  |           |
| A/D/S/             | M9                                | Ac. Sus.                  | 8 1/2                                      | 1 1/2 | Dome                    | 1                         | Dome          |                          |               | 38-22 $\pm$ 3  | 88   | 15                      | 700, 6k                           | 4/                        | 31 x 10 x 12                     | Opt.                                 | Metal                   | 40 Pair                   | 1100.00 Pair |           |
|                    | M12                               | Ac. Sus.                  | (2)8 1/2                                   | 5 7/8 | Cone                    | 1                         | Dome          |                          |               | 34-22 $\pm$ 3  | 87   | 15                      | 200, 2k                           | 4/                        | 41 x 11 x 14                     | Opt.                                 | Metal                   | 83 Pair                   | 1600.00 Pair |           |
|                    | M15                               | Ac. Sus.                  | (2)10                                      | 5 7/8 | Cone                    | 1                         | Dome          |                          |               | 26-22 $\pm$ 3  | 87   | 15                      | 200, 2k                           | 4/                        | 48 x 12 x 16                     | Opt.                                 | Metal                   | 110 Pair                  | 2600.00 Pair |           |
|                    | SW2                               | Tuned Port Subwoof.       | 10   |       |                         |                           |               |                          |               | 28-85 $\pm$ 3  | 35   | 85                      |                                   |                           | 9 x 14 x 28                      | Gray                                 | None                    |                           | 400.00       |           |
|                    | SW4                               | Tuned Port Subwoof.       | 10   |       |                         |                           |               |                          |               | 28-85 $\pm$ 3  | 35   | 85                      |                                   |                           | 18 x 14 x 16                     | Opt.                                 | None                    | 49                        | 600.00       |           |
|                    | SW5                               | Powered Ac. Sus. Subwoof. | 12   |       |                         |                           |               |                          |               | 24-125 $\pm$ 3   | Inc.   | 125                     |                                   |                           | 18 x 14 x 16                     | Opt.                                 | Metal                   | 63                        | 1000.00      |           |
|                    | CM5                               | Ac. Sus.                  | 5  |       |                         | 1                         | Dome          |                          |               | 60-20 $\pm$ 3  | 86   | 15                      | 2k                                | 4/                        | 10 x 6 x 7                       | Gray                                 | Metal                   | 14                        | 650.00 Pair  |           |
|                    | CM6                               | Ac. Sus.                  | 6  |       |                         | 1                         | Dome          |                          |               | 50-20 $\pm$ 3  | 87   | 15                      | 2k                                | 4/                        | 13 x 8 x 9                       | Gray                                 | Metal                   | 22                        | 900.00 Pair  |           |
|                    | CM7                               | Ac. Sus.                  | 8  | 1 1/2 | Dome                    | 1                         | Dome          |                          |               | 40-20 $\pm$ 3  | 87   | 15                      | 700, 2k                           | 4/                        | 17 x 9 x 11                      | Gray                                 | Metal                   | 38                        | 1400.00 Pair |           |
|                    | L7e                               | Ac. Sus.                  | 7  |       |                         | 1                         | Dome          |                          |               |  |  |                         | 4/                                | 17 x 10 x 9               | Opt., Vinyl                      | Metal                                | 23                      | 500.00 Pair               |              |           |
|                    | L8e                               | Ac. Sus.                  | 8  |       |                         | 1                         | Dome          |                          |               |  |  |                         | 4/                                | 20 x 12 x 10              | Opt., Vinyl                      | Metal                                | 28                      | 600.00 Pair               |              |           |
|                    | L9e                               | Ac. Sus.                  | 8  | 1 1/2 | Dome                    | 1                         | Dome          |                          |               |  |  |                         | 4/                                | 22 x 11 x 10              | Opt.                             | Metal                                | 35                      | 800.00 Pair               |              |           |
|                    | L200cc                            | Ac. Sus.                  | 4  |       |                         | 1                         | Dome          |                          |               | 85-20 $\pm$ 3  | 88   | 5                       | 2.5k                              |                           | 5 x 6 x 5                        | Opt.                                 | Metal                   | 12 Pair                   |              |           |
|                    | L300cc                            | Ac. Sus.                  | 5 1/4                                      |       |                         | 1                         | Dome          |                          |               | 68-20 $\pm$ 3  | 90   | 5                       | 2.5k                              |                           | 6 x 9 x 6                        | Opt.                                 | Metal                   | 19 Pair                   |              |           |
|                    | 300i                              | In-Wall Inf. Baf.         | 5 1/4                                      |       |                         | 1                         | Dome          |                          |               | 50-20 $\pm$ 3  | 90   | 5                       | 2.5k                              | 4/                        | 7 x 9                            | Opt.                                 | Metal                   | 10 Pair                   |              |           |
|                    | 400i                              | In-Wall Inf. Baf.         | 6  |       |                         | 1                         | Dome          |                          |               | 42-20 $\pm$ 3  | 91   | 5                       | 1.6k                              |                           | 7 x 11                           | Opt.                                 | Metal                   | 19 Pair                   |              |           |
| ADVANCED AKUSTIC   | RC 201 Compact Monitor            | Aperiodic                 | 7  |       |                         | 3/4                       | Dome          | No                       |               | 45-40 $\pm$ 2  | 86   | 50                      | 3.15k                             | 8/6                       | 14 x 9 x 10                      | Opt., Wood                           | Black Knit              | 25                        | 925.00 Pair  |           |
|                    | RC 401 Akustic Monitor            | Aperiodic                 | (2)7                                       |       |                         | 3/4                       | Dome          | No                       |               | 40-40 $\pm$ 2  | 90   | 50                      | 3.15k                             | 4/3                       | 36 x 9 x 10                      | Opt., Wood                           | Black Knit              | 45                        | 1575.00 Pair |           |
|                    | RC 701 Reference Monitor          | QB3 Vented                | 9  |       |                         | 1 1/8                     | Dome          | No                       |               | 35-22 $\pm$ 2  | 89   | 50                      | 1.75k                             | 8/6                       | 40 x 10 x 12                     | Opt., Wood                           | Black Knit              | 60                        | 1975.00 Pair |           |
|                    | RC 1001 Akustic Reference Monitor | QB3 Vented Aperiodic      | (2)12                                      | (2)7  | Cones                   | 3/4                       | Dome          | No                       |               | 25-40 $\pm$ 2  | 90   | 50                      | 125, 3.15k                        | 4/3                       | 72 x 16 x 22                     | Opt., Wood                           | Black Knit              | 150                       | 4500.00 Pair |           |
|                    |                                   |                           |  |       |                         |                           |               |                          |               |  |  |                         |                                   |                           |                                  |                                      |                         |                           |              |           |



# LOUDSPEAKERS

| MANUFACTURER                     | Model                       | Design Principle                      | Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Low Cutoff? Woofer W. Midrange = M, Tweeter = T, Superwoofer = ST | Apexhole Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$    |
|----------------------------------|-----------------------------|---------------------------------------|--------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|--|--|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|-------------|---------------------------|--------------|--------------|
| ADVANCED ELECTRO-DYNAMIC SYSTEMS | Cybele DLS-73               | Inf. Baf.                             | 12                       |                         |                           | 2x6           | Cyl.                     | No           |  | 30-20 $\pm$ 3                                    | 87                      | 40                                | 1.5k                      | 8/7                             | 15 x 10 x 44                         | Cloth       | Dpt., Knit                | 60           | 2195.00 Pair |
| ADVANCED SOUND                   | By-Polar Amplified          | Bipolar & Powered Subwoof. Tuned Port | (2)8, (2)10              | 4 1/2                   | Cone                      | 3 1/2         | Dome                     |              |  | 30-22 $\pm$ 2                                    | 94                      | 100 Inc.                          | 1k,6k                     | 6/4                             | Two Pieces Per Side                  | Dpt., Wood  | Dpt., Knit                | 400 Side     | 2700.00 Pair |
|                                  | Zaggurat                    | Tuned Port                            | 10                       | 4 1/2                   | Cone                      | 3             | Dome                     | No           |  | 32-20  | 91                      | 100                               | 1k,6k                     | 8/6                             | 17 x 15 x 40                         | Dpt., Wood  | Dpt., Knit                | 155          | 1800.00 Pair |
|                                  | Campanile                   | Powered Port                          | (2)8                     | 4 1/2                   | Cone                      | 3             | Dome                     | No           |  | 45-22  | 92                      |                                   | 1k,6k                     | 6/4                             | 13 x 13 x 36                         | Dpt., Wood  | Dpt., Knit                | 70           | 1200.00 Pair |
|                                  | Monolith Amplified          | Powered Tuned Port Subwoof.           | 10                       |                         |                           |               |                          |              |  | 32-150   | 91                      | 100 Inc.                          | 150                       | 6/4                             | 20 x 20 x 22                         | Dpt., Wood  | Dpt., Knit                | 70           | 985.00 Pair  |
| ADVENT                           | Mini Advent                 | Ac. Sus.                              | 5 1/4                    |                         |                           | 1/2           | Dome                     |              |  | 110-21 $\pm$ 3                                   | 88                      |                                   | 4.5k                      | 6/4                             | 11 x 6 x 5                           | Oiled Pecan | Brown Knit                | 10           | 199.95 Pair  |
|                                  | Mini Advent Subwoofer       | Ac. Sus.                              | (2)5 1/4                 |                         |                           |               |                          |              |  | 60-220 $\pm$ 3                                   | 91                      |                                   | 220                       | 6/4                             | 7 x 12 x 7                           | Black Vinyl |                           | 11           | 179.95       |
|                                  | Baby II                     | Ac. Sus.                              | 6 1/2                    |                         |                           | 1/2           | Dome                     |              |  | 60-21 $\pm$ 3                                    | 89                      |                                   | 4.5k                      | 6/4                             | 17 x 11 x 6                          | Black/Pecan | Brown Knit                | 13           | 249.95 Pair  |
|                                  | Prodigy Tower               | Ac. Sus.                              | 8                        |                         |                           | 3/4           | Dome                     |              |  | 45-23 $\pm$ 3                                    | 89                      |                                   | 3k                        | 6/4                             | 28 x 10 x 8                          | Oiled Pecan | Brown Knit                | 25 1/4       | 349.95 Pair  |
|                                  | Legacy                      | Ac. Sus.                              | 10                       |                         |                           | 1             | Dome                     |              |  | 42-23 $\pm$ 3                                    | 88                      |                                   | 2k                        | 8/6                             | 28 x 16 x 10                         | Black/Pecan | Brown Knit                | 46 1/2       | 449.95 Pair  |
|                                  | Maestro                     | Ac. Sus.                              | 10                       | 2                       | Dome                      | 1             | Dome                     |              |  | 42-23 $\pm$ 3                                    | 90                      |                                   | 900,4.5k                  | 6/4                             | 33 x 16 x 10                         | Black/Pecan | Brown Knit                | 50           | 699.95 Pair  |
|                                  | Indoor/Outdoor Mini         | Ac. Sus.                              | 5 1/4                    |                         |                           | 1/2           | Dome                     |              |  | 110-21 $\pm$ 3                                   | 88                      |                                   | 4.5k                      | 6/4                             | 11 x 6 x 5                           | Black       | Brown Knit                | 10           | 199.95 Pair  |
|                                  | Prodigy II                  | Ac. Sus.                              | 8                        |                         |                           | 3/4           | Dome                     |              |  | 45-23 $\pm$ 3                                    | 89                      |                                   | 3k                        | 6/4                             | 23 x 13 x 8                          | Pecan       | Black Metal Brown Knit    | 25 1/4       | 350.00 Pair  |
| ALLISON ACDUSTICS                | IC-20 (With remote control) | Ac. Sus.                              | (2)10                    | (4)3 1/2                | Inv. Cones                | (4)1          | Inv. Cones               |              |  |  | 87                      | 30                                | 350,3.75k                 | 8/5.5                           | 48 x 21 x 12                         | Dpt., Wood  | Black Cloth               | 100          | 4900.00 Pair |
|                                  | CD 9                        | Ac. Sus.                              | 10                       | 3 1/2                   | Inv. Cone                 | 1             | Inv. Cone                | M, T         |  |  | 87                      | 30                                | 350,3.75k                 | 4/3.5                           | 37 x 13 x 11                         | Dpt., Wood  | Black Plast.              | 55 1/2       | 650.00       |
|                                  | CD 8                        | Ac. Sus.                              | 8                        | 3 1/2                   | Inv. Cone                 | 1             | Inv. Cone                | M, T         |  |  | 87                      | 30                                | 450,3.75k                 | 4/3.5                           | 29 x 11 x 11                         | Dpt., Wood  | Black Plast.              | 35 1/2       | 475.00       |
|                                  | CD 7                        | Ac. Sus.                              | 8                        |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 2k                        | 4/3.5                           | 28 x 10 x 10                         | Dpt., Wood  | Black Plast.              | 22           | 300.00       |
|                                  | CD 6                        | Ac. Sus.                              | 8                        |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 2k                        | 4/3.5                           | 11 x 11 x 11                         | Dpt., Wood  | Black Plast.              | 17           | 230.00       |
|                                  | LC 110                      | Ac. Sus.                              | 8                        |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 2k                        | 4/3.5                           | 18 x 12 x 8                          | Dpt., Vinyl | Black Cloth               | 16 1/2       | 145.00       |
|                                  | LC 120                      | Ac. Sus.                              | 8                        |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 2k                        | 4/3.5                           | 22 x 14 x 8                          | Wal. Vinyl  | Black Cloth               | 21 1/4       | 175.00       |
|                                  | LC 145                      | Ac. Sus.                              | 8                        |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 2k                        | 4/3.5                           | 25 x 16 x 8                          | Wal. Vinyl  | Black Cloth               | 25           | 210.00       |
|                                  | Mini 2                      | Ac. Sus.                              | 4                        |                         |                           | 1             | Inv. Cone Dome           |              |  |  | 87                      | 10                                | 2k                        | 6/4.5                           | 7 x 5 x 4                            | Black Vinyl | Black Cloth               | 5            | 198.00       |
|                                  | Mini 1SW                    | Ac. Sus.                              | 8                        |                         |                           |               |                          |              |  |  | 87                      | 10                                | 150                       | 4/3.5                           | 11 x 11 x 11                         | Black Enam. | Mesh                      | 16 1/2       | 289.00       |
|                                  | Mini 2/SW                   | Ac. Subwoof. Sat. & Subwoof. Powered  | 8                        | (2)4                    | Cones                     | (2)1          | Domes                    |              |  |  | 87                      | 10                                | 150,2k                    | 4/3.5                           | Three Pieces                         | Black Enam. | Black Plast. Mesh         | 26 1/2 Sys.  | 459.00 Sys.  |
|                                  | Mini 2P                     | Ac. Subwoof. Powered                  | 4                        |                         |                           | 1             | Dome                     |              |  |  |                         |                                   | 2k                        |                                 | 7 x 5 x 4                            | Black Enam. | Black Mesh                | 13 Pair      | 359.00 Pair  |
|                                  | AL 105                      | Ac. Sus.                              | 6 1/2                    |                         |                           | 1             | Dome                     |              |  |  | 87                      | 15                                | 2.5k                      | 6/4                             | 15 x 10 x 8                          | Dpt., Vinyl | Black Knit                | 13           | 120.00       |
|                                  | AL 110                      | Ac. Sus.                              | 6 1/2                    |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 2k                        | 6/4                             | 16 x 10 x 9                          | Dpt., Vinyl | Black Knit                | 16           | 170.00       |
|                                  | AL 115                      | Ac. Sus.                              | 8                        |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 2k                        | 6/4                             | 20 x 11 x 10                         | Dpt., Vinyl | Black Knit                | 22           | 220.00       |
|                                  | AL 120                      | Ac. Sus.                              | (2)6 1/2                 |                         |                           | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 100,2k                    | 6/4                             | 24 x 11 x 11                         | Dpt., Vinyl | Black Knit                | 33           | 300.00       |
|                                  | AL 125                      | Ac. Sus.                              | (2)6 1/2                 | 3 1/2                   | Inv. Cone                 | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 450,4k                    | 6/4                             | 31 x 11 x 12                         | Dpt., Vinyl | Black Knit                | 40           | 450.00       |
|                                  | AL 130                      | Ac. Sus.                              | (2)8                     | 3 1/2                   | Inv. Cone                 | 1             | Inv. Cone                |              |  |  | 87                      | 15                                | 450,4k                    | 6/4                             | 38 x 13 x 14                         | Dpt., Vinyl | Black Knit                | 57           | 550.00       |
|                                  | MS 205                      | Ac. Sus.                              | 8                        | (2)4                    | Inv. Cones                | (2)1          | Inv. Cones               |              |  |  | 87                      | 10                                | 150,2.5k                  | 4/3.5                           | Three Pieces                         | Dpt., Enam. | Black Knit                | 28 Sys.      | 499.00 Sys.  |
| ALTA                             | Altamate                    | Ported                                | 6 1/2                    |                         |                           | 1             | Dome                     |              |  | 40-22 $\pm$ 3                                    | 90                      | 20                                | 3.8k                      | 4/3.6                           | 9 Dia. x 20                          | Dpt.        | Dpt., Cloth               | 12           | 498.00 Pair  |
|                                  | 7                           | Ported                                | 8                        |                         |                           | 1             | Dome                     |              |  | 35-22 $\pm$ 2                                    | 92                      | 30                                | 2.8k                      | 4/3.2                           | 12 Dia. x 50                         | Dpt.        | Dpt., Cloth               | 24           | 850.00 Pair  |
|                                  | 6                           | Ported                                | 8                        | 4 1/2                   | Cone                      | 1 1/4         | Dome                     |              |  | 32-26 $\pm$ 2                                    | 90                      | 40                                | 240,6.8k                  | 4/3.2                           | 12 Dia. x 58                         | Dpt.        | Dpt., Cloth               | 27           | 1198.00 Pair |
|                                  | 5                           | Ported                                | (2)8                     | (2)4 1/2                | Cones                     | 1 1/4         | Dome                     |              |  | 28-26 $\pm$ 2                                    | 91                      | 50                                | 240,6.8k                  | 4/3.2                           | 14 Dia. x 91                         | Dpt.        | Dpt., Cloth               | 53           | 1898.00 Pair |
|                                  | Entre FS2                   | Ported                                | 8                        |                         |                           | 3/4           | Dome                     |              |  | 42-20 $\pm$ 3                                    | 89                      | 20                                | 3.3k                      | 4/3.6                           | 12 x 12 x 46                         | Black       | Black Cloth               |              | 450.00 Pair  |
|                                  | Entre C2                    | Ported                                | 6 1/2                    |                         |                           | 3/4           | Dome                     |              |  | 48-20 $\pm$ 3                                    | 89                      | 20                                | 4.2k                      | 4/3.6                           | 9 Dia. x 27                          | Black       | Black Cloth               |              | 358.00 Pair  |
|                                  | Entre DSW                   | Ported Subwoof.                       | 8                        |                         |                           |               |                          |              |  | 30-150 $\pm$ 3                                   | 88                      | 40                                | 90                        | 8/6.5                           | 12 x 12 x 40                         | Dpt.        | Black Cloth Dpt.          |              | 339.00 Pair  |
| ALTEC LANSING                    | Bias 550                    |                                       | (2)10, 8                 | 6                       | Cone                      | 1             | Dome                     | W, M, T      |  | 20-22 $\pm$ 2                                    | 90                      |                                   |                           |                                 | 71 x 19 x 24                         | Wal. Ven.   | Black Steel               | 437          | 1200.00 Pair |
|                                  | 512                         |                                       | (2)10                    | 6 1/2, 2                | Domes                     | 1             | Dome                     |              |  | 20-22 $\pm$ 3                                    | 90                      | 75                                | 180,1.5k                  |                                 | 57 x 13 x 14                         |             | Black Steel               | 125          | 4500.00 Pair |
|                                  | 511                         |                                       | (2)10                    | 2                       | Dome                      | 1             | Dome                     |              |  | 20-22 $\pm$ 3                                    | 92                      |                                   | 180,1.5k, 3.5k            |                                 | 57 x 13 x 14                         | Dpt.        | Black Steel               | 110          | 3000.00 Pair |



*The Leader  
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A DIVISION OF DANA INNOVATIONS





**M30** – Like the rest of the Sonance family, high fidelity and low profile blend into the small M30. The small size allows it to fit into tight locations between moldings, around windows, or next to mirrors. The top quality components and petite size provide superior imaging and that great Sonance sound.

Frequency response . . . 70 Hz to 20 KHz  $\pm$  2 dB  
 Power requirement . . . 5 to 75 watts  
 Efficiency . . . 86 dB 1W/1M  
 Dimensions  
 External frame . . . 6 $\frac{1}{2}$ "  $\times$  9 $\frac{1}{8}$ "  
 Retrofit Cut-Out . . . 5 $\frac{1}{2}$ "  $\times$  8 $\frac{1}{8}$ "  
 Depth . . . 2 $\frac{1}{2}$ " from finished wall



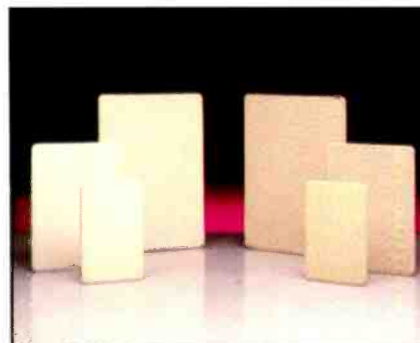
**Sonance IA** – Being cost effective, the Sonance IA extends the quality of the Sonance line to a new level. Capturing the beauty of the Sonance models II and III, the Sonance IA's affordability encourages you to enjoy music in areas previously overlooked.

Frequency response . . . 85 Hz to 12 KHz  $\pm$  5 dB  
 Power requirement . . . 3 to 35 watts  
 Efficiency . . . 90 dB 1W/1M  
 Dimensions  
 External frame . . . 9"  $\times$  12"  
 Retrofit Cut-Out . . . 7 $\frac{1}{8}$ "  $\times$  10 $\frac{1}{8}$ "  
 Depth . . . 3" will fit in "2  $\times$  4" wall



**Sonance II** – The Sonance II was created as the best value speaker in the Sonance line, offering exceptional performance in all applications. The Sonance II allows you to enjoy great sound at a reasonable price. Combining sonic quality with innovative design makes the Sonance II an outstanding value.

Frequency response . . . 55 Hz to 20 KHz  $\pm$  3 dB  
 Power requirement . . . 5 to 50 watts  
 Efficiency . . . 90 dB 1W/1M  
 Dimensions  
 External frame . . . 9"  $\times$  12"  
 Retrofit Cut-Out . . . 7 $\frac{1}{8}$ "  $\times$  10 $\frac{1}{8}$ "  
 Depth . . . 3 $\frac{1}{4}$ " will fit in "2  $\times$  4" wall



**GRILLES** – There is a choice of two Sonance grille types, cloth or metal. Cloth for a softer style, and metal for a more conventional look. Both grill types are paintable. To blend with a wallpapered area, a matching fabric can replace the cloth grille.

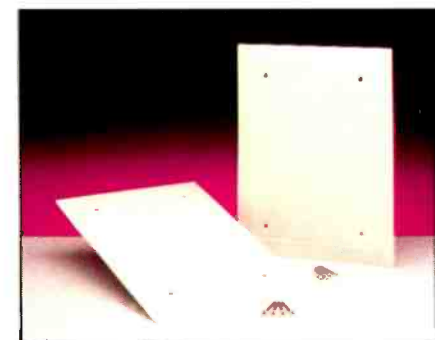


**VC50B & ABB1** – Sonance provides a volume control (VC50B) and AB switch (ABB1) in an attractive table top/under counter version, expanding the applications of Sonance's controls. Sonance keeps the architectural audio customer in mind.



**AT2, 4, 8 & 12** – Sonance Audio Terminals (ATs) provide a convenient connecting point for speaker/amplifier wires entering or exiting walls. Our ATs have gold plated 5-way binding posts, screw to connect terminals inside the wall, and accept 22 to 14 gauge wire. The ATs are available in white, ivory, brown, stainless steel and brass. There are audio terminals for one speaker (AT2), two speakers (AT4), four speakers (AT8) and six speakers (AT12).

**COVERPLATES** (Space Saver) – Sonance coverplates economically reserve space for speaker installation at the new construction phase, when it is less expensive to place wiring, prepare walls and install brackets. The coverplate may be painted or wallpapered and then later removed to allow speaker installations. (Fits IA, II, III brackets)





**Sonance III** – The Sonance III was the first speaker to bring high fidelity music reproduction to in-wall installations. The Sonance III was designed to answer the need for speakers that are accurate and dynamic, yet unobtrusive to the listening environment. The current Sonance III has been continuously improved since its introduction in 1985, and remains a leader of performance in "Architectural Audio" speakers.

Frequency response ..... 45 Hz to 20 KHz  $\pm$  2 dB  
 Power requirement ..... 5 to 75 watts  
 Efficiency ..... 89 dB 1W/1M  
 Dimensions  
 External frame ..... 9"  $\times$  12"  
 Retrofit Cut-Out ..... 7 7/8"  $\times$  10 1/8"  
 Depth ..... 3 1/4" will fit in "2  $\times$  4" wall



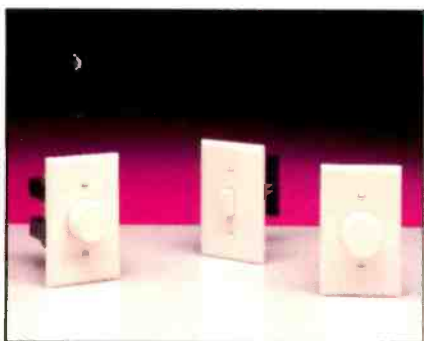
**Sonance IV** – The Sonance IV provides the highest level of sonic performance of any in-wall speaker available. Engineered to fit into your walls and ceilings, the Sonance IV is designed to let the music be the main attraction with the acoustic ability to recreate the most breathtaking musical passages.

Frequency response ..... 35 Hz to 22 KHz  $\pm$  2 dB  
 Power requirement ..... 5 to 100 watts  
 Efficiency ..... 90 dB 1W/1M  
 Dimensions  
 External frame ..... 12 1/8"  $\times$  16 1/8"  
 Retrofit Cut-Out ..... 10 5/8"  $\times$  14 3/4"  
 Depth ..... 3 3/4" will fit in "2  $\times$  4" wall



**PSW2** – Rich deep tones emanate from a hidden source: The PSW2 built-in Subwoofer, a second generation of an original idea, is an improvement on the past. The PSW2 was developed to complement our full line of high fidelity speakers. The purpose of our PSW2 Subwoofer is to provide full, rich, distinct bass performance in your music – without visual effect on your environment.

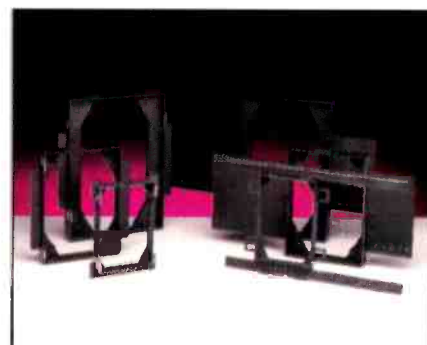
Frequency response ..... 30 Hz to 125 Hz  $\pm$  3 dB  
 Efficiency ..... 87 dB 1W/1M  
 Dimensions  
 External frame ..... 12 1/8"  $\times$  16 1/8"  
 Retrofit Cut-Out ..... 10 5/8"  $\times$  14 3/4"  
 Depth ..... 3 3/4" will fit in "2  $\times$  4" wall



**VC50, VC100, & ABW1** – Sonance has created 50 watt and 100 watt volume controls, plus an A/B source or speaker selector switch with high-power handling capacity. All have modular construction, terminal block connectors and are mounted on P.C. boards. The Sonance VC50, VC100 & ABW1 feature alignment capabilities and can be easily grouped into standard gang wall mounts. They use standard light switch wall plates and can virtually match any decor.



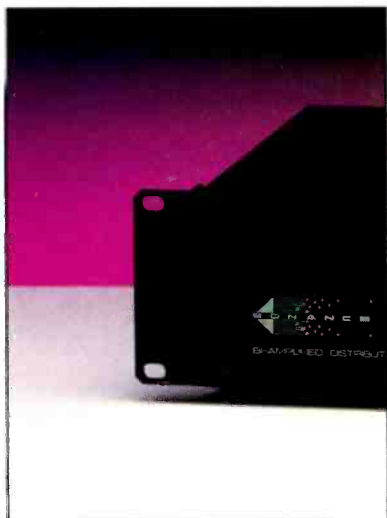
**Active Subwoofer System** – The VCA1 is a 60 watt three channel integrated amplifier with the third channel dedicated to bass frequencies. The VCA1 features active bass boost circuitry, three selectable roll off frequencies, and a unique amplifier protection system. The Sonance VCA1 can power one or two 8" ASW1 flush mount bass modules, one or two pairs of satellite speakers and is governed by a local wall-mount volume control.



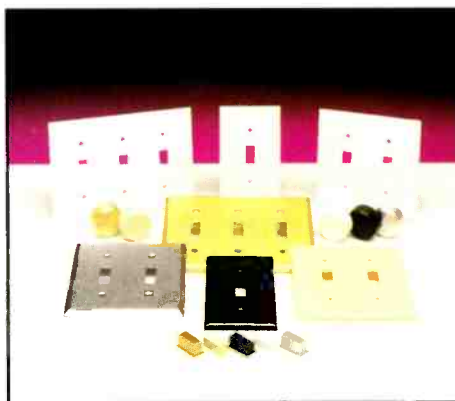
**B-BACKETS** – Sonance's patented bracket systems allow speaker installation in an existing building or during construction. "Retrofit brackets" for a home or office already built, or "new construction brackets" for a home in the design or building stage.

# The Leader in "Architectural Audio"





**RACK EARS** – Sonance provides "Rack Ears" as an optional method of installing the VCA1 amplifier.



**WALLPLATES** – The "One Stop Shop" is another convenience of Sonance. We offer Leviton™ wallplates in white, ivory, brown, brass and stainless steel. Also available are our knobs and buttons in matching colors.



Whether you are building a new home or adding a high fidelity system to your existing residence, **Sonance** provides the products necessary for all applications. We take pride in responding to the ideas of our customers by developing products that serve their needs.

For More Information



Call 1-800-553-4355

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Vancouver, B.C. V5Y 1M8, (604) 873-4475

Enter No. 2 on Reader Service Card



**SHELF MOUNT WINGS** – Sonance provides "Shelf Wings" as an optional method of installing the VC50B and ABB1.



# LOUDSPEAKERS

| MANUFACTURER                 | Model         |                           | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T | Antichief Frequency Response, Hz to kHz, ±dB | SPL, 1 Watt 1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$ |
|------------------------------|---------------|---------------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|--|--|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|-------------|---------------------------|--------------|-----------|
| ALTEC LANSING<br>(Continued) | 510           |                           | (2)10                                      | 2                       | Dome                      | 1             | Dome                     |              |  | 20-22 ±3                                     | 92                      |                                   |                           | 49 x 12 x 14                    | Opl.                                 | Black Steel | 100                       | 1600.00      |           |
|                              | 508           |                           | (2)8                                       | 2                       | Dome                      | 1             | Dome                     |              |  | 24-22 ±3                                     | 90.5                    |                                   |                           | 40 x 11 x 11                    | Opt.                                 | Black Steel | 63                        | 110.00       |           |
|                              | 505           |                           | 10   | 3½                      | Dome                      | 1             | Dome                     |              |  | 28-22 ±3                                     | 92                      |                                   |                           | 34 x 12 x 4                     | Opt.                                 | Black Steel | 54                        | 850.00       |           |
|                              | 305           |                           | 10   | 2                       | Dome                      | 1             | Dome                     |              |  | 28-22 ±3                                     | 93                      |                                   |                           | 27 x 15 x 12                    | Opt.                                 | Black Steel | 50                        | 800.00       |           |
|                              | 205           |                           | 8  | 3½                      | Dome                      | 1             | Dome                     |              |  | 33-22 ±3                                     | 91                      |                                   |                           | 22 x 12 x 9                     | Opt.                                 | Black Steel | 35                        | 600.00       |           |
|                              | 105           |                           | 6  |                         |                           | 1             |                          |              |  | 40-22 ±3                                     | 91                      |                                   |                           | 17 x 10 x 9                     | Opt.                                 | Black Steel | 40                        | 375.00       |           |
|                              | 95            |                           | 8  | 4                       | Dome                      | ¾             | Dome                     |              |  | 33-21 ±3                                     | 91                      |                                   |                           | 22 x 12 x 9                     | Opt., Vinyl                          | Black Steel | 28                        | 300.00       |           |
|                              | 85            |                           | 6½   |                         |                           | ¾             | Dome                     |              |  | 40-21 ±3                                     | 91                      |                                   |                           | 17 x 10 x 9                     | Opt., Vinyl                          | Black Steel | 35                        | 200.00       |           |
|                              | 55            |                           | 4  |                         |                           | ¾             | Dome                     |              |  | 50-22 ±3                                     | 85                      |                                   |                           | 9 x 7 x 5                       | Black ABS                            | Black Steel | 11                        | 250.00       |           |
| AMBLÉ                        | Bravo         | Tuned Port                | 6½   |                         |                           | 1             | Dome                     |              |  | 92   | 10                      | 3.2k                              | 8                         | 16 x 10 x 8                     | Oak                                  | Black Knit  | 17                        | 295.00       |           |
|                              | Encore        | Tuned Port                | 8  |                         |                           | 1             | Dome                     |              |  | 90   | 10                      | 2.5k                              | 8                         | 19 x 12 x 11                    | Oak                                  | Black Knit  | 28                        | 395.00       |           |
|                              | SW 1200       | Subwoof.                  | 12   |                         |                           |               |                          |              |  | 90   | 20                      | 100                               | 8                         | 18 x 19 x 18                    | Oak                                  | Black Knit  | 54                        | 375.00       |           |
| AMBRIA                       | System 2000   | Inf. Baf. Sat. & Subwoof. | (6)5¼                                      | 4                       | Cone                      | ¾             | Dome                     |              |  | 30-20 ±3                                     | 92                      | 20                                | 120,3k                    | 8/6                             | Five Pieces                          | Opt., Lacq. | Metal                     | 68 Sys.      | 1750.00   |
|                              | System 1000   | Inf. Baf. Sat. & Subwoof. | (4)5¼                                      | 4                       | Cone                      | ¾             | Dome                     |              |  | 35-20 ±3                                     | 92                      | 20                                | 120,3k                    | 8/6                             | Three Pieces                         | Opt., Lacq. | Metal                     | 40 Sys.      | 900.00    |
|                              | S-150         | Inf. Baf.                 | 4  |                         |                           | ¾             | Dome                     |              |  | 85-20 ±3                                     | 90                      | 20                                | 3k                        | 8/6                             | 7 x 5 x 7                            | Opt.        | Metal                     | 18           | 495.00    |
|                              | S-100         | Inf. Baf.                 | 4  |                         |                           | ¾             | Dome                     |              |  | 110-20 ±3                                    | 90                      | 20                                | 3k                        | 8/6                             | 7 x 5 x 3                            | Opt.        | Metal                     | 6            | 335.00    |
|                              | C300          | In-Wall Inf. Baf.         | 6  |                         |                           | 1             | Dome                     |              |  | 45-20 ±3                                     | 90                      | 15                                | 2.5k                      | /8                              | 12 x 9 x 4                           | White       | White Metal               | 11           | 315.00    |
|                              | C200          | In-Wall Inf. Baf.         | 5½   |                         |                           | ¾             | Dome                     |              |  | 60-20 ±3                                     | 89                      | 10                                | 3k                        | /4                              | 11 x 8 x 3                           | White       | White Metal               | 8            | 315.00    |
|                              | S-100F        | In-Wall Inf. Baf.         | 4  |                         |                           | ¾             | Dome                     |              |  | 110-20 ±3                                    | 90                      | 20                                | 3k                        | 8/6                             | 7 x 5 x 2                            | White       | White Metal               | 5            | 315.00    |
| AMERICAN ACOUSTICS           | D2550         |                           | 6½   |                         |                           |               | Dome                     |              |  | 65-22  | 91.5                    | 3k                                | 4/8                       | 13 x 10 x 7                     | Opt., Wood                           | Opt., Knit  | 12                        | 229.95       |           |
|                              | D3550         |                           | 8  |                         |                           |               | Dome                     |              |  | 60-22  | 94.5                    | 3k                                | 4/8                       | 18 x 11 x 8                     | Opt., Wood                           | Opt., Knit  | 19                        | 279.95       |           |
|                              | D4550         |                           | 10   | 5                       | Cone                      |               | Dome                     |              |  | 45-22  | 95.5                    | 2.7k,6k                           | 4/8                       | 24 x 15 x 10                    | Opt., Wood                           | Opt., Knit  | 34                        | 209.95       |           |
|                              | D5550         |                           | 12   | 5                       | Cone                      | 1,3           | Dome, Cone               |              |  | 43-22  | 96.5                    | 1.7k,6k                           | 4/8                       | 27 x 15 x 10                    | Opt., Wood                           | Opt., Knit  | 40                        | 259.95       |           |
|                              | D8550         |                           | 15   | 5                       | Cone                      |               | Dome                     |              |  | 37-22  | 98.5                    | 700,5k                            | 4/8                       | 31 x 18 x 14                    | Opt., Wood                           | Opt., Knit  | 62                        | 374.95       |           |
|                              | D9550         |                           | 12   | (2)5                    | Cones                     | 1,3           | Dome, Cone               |              |  | 32-22  | 99.5                    | 1.7k,6k                           |                           | 41 x 16 x 15                    | Opt., Wood                           | Opt., Knit  | 76                        | 439.95       |           |
|                              | AAL 62        | Vented                    | 6½   |                         |                           | ¾             | Piezo                    |              |  | 90-20 ±3                                     | 90                      |                                   | 4/                        | 13 x 9 x 7                      | Opt., Wood                           | Opt., Knit  |                           | 199.90       |           |
|                              | AAL 83        | Vented                    | 8  | 3                       | Cone                      | ¾             | Piezo                    |              |  | 75-20 ±3                                     | 92                      |                                   |                           | 18 x 11 x 8                     | Oak                                  | Black Knit  |                           | 229.90       |           |
|                              | AAL 103       | Vented                    | 10   | 4                       | Cone                      | ¾             | Piezo                    |              |  | 55-20 ±3                                     | 91.5                    |                                   |                           | 24 x 15 x 10                    | Oak                                  | Black Knit  |                           | 179.95       |           |
|                              | AAL 124       | Vented                    | 12   | 3,4                     | Cones                     | ¾             | Piezo                    |              |  | 50-20 ±3                                     | 90                      |                                   |                           | 27 x 15 x 11                    | Oak                                  | Black Knit  |                           | 199.95       |           |
|                              | AAL 154       | Vented                    | 15   | 3,4                     | Cones                     | ¾             | Piezo                    |              |  | 40-20 ±3                                     | 92                      |                                   |                           | 29 x 18 x 15                    | Oak                                  | Black Knit  |                           | 249.95       |           |
|                              | DS66          | Bass Ref.                 | (2)6                                       |                         |                           | 1             | Dome                     |              |  | 42-22 ±3                                     | 93                      | 550,3.5k                          | 4/                        | 21 x 10 x 11                    | Black Ash                            | Black Knit  |                           | 149.95       |           |
|                              | DS88          | Bass Ref.                 | (2)8                                       |                         |                           | 1             | Dome                     |              |  | 38-22 ±3                                     | 93                      | 400,1.8k                          | 4/                        | 26 x 12 x 13                    | Black Ash                            | Black Knit  |                           | 249.95       |           |
|                              | DS1010        | Bass Ref.                 | (2)10                                      | 5                       |                           | 1             | Dome                     |              |  | 34-22 ±3                                     | 94                      | 650,3.7k                          | 4/                        | 37 x 14 x 15                    | Black Ash                            | Black Knit  |                           | 374.95       |           |
|                              | DS1212        | Bass Ref.                 | (2)12                                      | 6½                      |                           | 1             | Dome                     |              |  | 23-22 ±3                                     | 95                      | 350,2.8k                          | 4/                        | 44 x 15 x 18                    | Black Ash                            | Black Knit  |                           | 499.95       |           |
| ANALOG ONE                   | Monitor 1     | Inf. Baf.                 | (2)6                                       | (2)3                    | Domes                     | (2)1          | Domes                    | No           | 60-32  | 89   | (2) 25                  | 700,4k                            | 8/6                       | 36 x 9 x 9                      | Oak                                  | None        | 20                        | 1800.00      |           |
|                              | Monitor 2     | Dipole                    |  | (2)9                    | Cones                     | 1             | Dome                     | M,T          | 80-32  | 90   | (4) 25                  | 1k                                | 8/6                       | 14 x 33 x 5                     | Black                                | Knit        | 14                        | 950.00       |           |
|                              | Monitor 3     | Dipole                    |  | (4)9                    | Cones                     | (2)1          | Domes                    | M,T          | 80-32  | 90   | (4) 35                  | 1k                                | 8/6                       | 14 x 37 x 5                     | Black                                | Knit        | 16                        | 1150.00      |           |
|                              | Super Sub     | Dipole Subwoof.           | 12   |                         |                           |               |                          | W            | 22-125   | 91   | 50                      | 80-125                            | 8/6                       | 30 x 40 x 5                     | Black                                | Knit        | 23                        | 1015.00      |           |
|                              | Audio Mirrors | Dipole                    | 12   | (3)9                    | Cones                     | (3)1          | Domes                    | W,M,T        | 22-32  | 90   | (3) 50                  | 125,1k                            | 8/6                       | Three Pieces                    | Black                                | Knit        | 54 Sys.                   | 3800.00      |           |



# LOUDSPEAKERS

| MANUFACTURER     | Model                    | Design Principle, Enclosure or System Type   | Woofer Diameter, Inches |          | Midrange Diameter, Inches |        | Tweeter Diameter, Inches |          | Tweeter Type |       | Separate Low Controls? Woofer = W, Midrange = M, Tweeter = T, Subwoofer = ST |               | Anechoic Frequency Response, Hz to kHz, ± dB |              | SPL, 1 Watt/1 Meter, dB |               | Recommended Min. Amp Power, Watts |          | Crossover Frequencies, Hz |  | Impedance, Ohms: Nominal/Minimum |  | Dimensions, Inches (To Nearest Inch) |             | Finish     | Grille Color and Material | Weight, Lbs.                     | Price, \$ |
|------------------|--------------------------|--|-------------------------|----------|---------------------------|--------|--------------------------|----------|--------------|-------|--|---------------|--|--------------|-------------------------|---------------|-----------------------------------|----------|---------------------------|--|----------------------------------|--|--------------------------------------|-------------|------------|---------------------------|----------------------------------|-----------|
|                  |                          |  |                         |          |                           |        |                          |          |              |       |  |               |  |              |                         |               |                                   |          |                           |  |                                  |  |                                      |             |            |                           |                                  |           |
| APOGEE ACOUSTICS | Scintilla                | Ribbon Dipole                                | 12x53                   | 2x53     | Ribbon                    | 0.5x53 | Ribbon                   |          |              | 30-20 |  | 100           | 500,5k                                       | 1, 4/        | 29 x 57 x 3             | Opt.          | Fbgls                             | 290 Pair |                           |  |                                  |  |                                      |             | Fbgls      | 290 Pair                  | 4395.00 Pair; West, 4545.00 Pair |           |
|                  | Duetta Signature         | Ribbon Dipole                                | 12x47                   |          |                           | 0.8x47 | Ribbon                   | T        |              | 30-20 |  | 100           | 600  | 4/3          | 25 x 57 x 3             | Opt.          | Fbgls                             | 225 Pair |                           |  |                                  |  |                                      |             | Fbgls      | 225 Pair                  | 3840.00 Pair; West, 3735.00 Pair |           |
|                  | Caliper Signature        | Ribbon Dipole                                | 12x37                   |          |                           | 0.8x47 | Ribbon                   |          |              | 30-20 |  | 100           | 600  | 4/3          | 24 x 48 x 2             | Opt.          | Fbgls                             | 140 Pair |                           |  |                                  |  |                                      |             | Fbgls      | 140 Pair                  | 2850.00 Pair; West, 2745.00 Pair |           |
|                  | Diva                     | Ribbon Dipole                                | 12x67                   | 0.9x67   | Ribbon                    | 0.2x67 | Ribbon                   | W,M,T    |              | 30-25 |  | 100           | 500,10k                                      | 4/3          | 31 x 73 x 3             | Opt.          | Fbgls                             | 300 Pair |                           |  |                                  |  |                                      |             | Fbgls      | 300 Pair                  | 8400.00 Pair; West, 8250.00 Pair |           |
|                  | Stage                    | Ribbon Dipole                                | 12x26                   |          |                           | 0.7x26 | Ribbon                   | T        |              | 35-20 |  | 50            | 600  | 4/3          | 26 x 37 x 2             | Fabric & Wood | Fbgls                             | 120 Pair |                           |  |                                  |  |                                      |             | Fbgls      | 120 Pair                  | 1995.00 Pair                     |           |
| AR               | Spirit 112               | Ac. Sus.                                     | 6                       |          |                           | 1      | Dome/Cone                | W,T      | 65-25 ±3     | 90    | 10   |               | 8/   | 14 x 8 x 7   | Opt., Wood Vinyl        | Black Knit    | 9¼                                |          |                           |  |                                  |  |                                      |             | Black Knit | 9¼                        | 289.90 Pair                      |           |
|                  | Spirit 122               | Ac. Sus.                                     | 6                       |          |                           | 1      | Dome/Cone                | W,T      | 62-25 ±3     | 90    | 10   |               | 8/   | 15 x 8 x 9   | Opt., Wood Vinyl        | Black Knit    | 11¼                               |          |                           |  |                                  |  |                                      |             | Black Knit | 11¼                       | 349.90 Pair                      |           |
|                  | Spirit 132               | Ac. Sus.                                     | 8                       |          |                           | 1      | Dome                     | W,M,T    | 55-22 ±3     | 90    | 10   |               | 8/   | 18 x 9 x 10  | Opt., Wood Vinyl        | Black Knit    | 15⅞                               |          |                           |  |                                  |  |                                      |             | Black Knit | 15⅞                       | 499.90 Pair                      |           |
|                  | Spirit 142               | Ac. Sus.                                     | 8                       | 6        | Cone                      | 1      | Dome/Cone                | W,M,T    | 52-25 ±3     | 90    | 10   |               | 4/   | 26 x 9 x 11  | Opt., Wood Vinyl        | Black Knit    | 23⅜                               |          |                           |  |                                  |  |                                      |             | Black Knit | 23⅜                       | 799.90 Pair                      |           |
|                  | Spirit 162               | Ac. Sus.                                     | (2)8                    | 6        | Cone                      | 1      | Dome                     | (2)W,M,T | 45-22 ±3     | 91    | 10   |               | 4/   | 37 x 9 x 14  | Opt., Wood Vinyl        | Black Knit    | 43⅜                               |          |                           |  |                                  |  |                                      |             | Black Knit | 43⅜                       | 1199.90 Pair                     |           |
|                  | Fun Partner              |  | 4                       |          |                           | 1      | Dome                     | W,T      | 90-25 ±3     | 91    | 7  | 4k            | 4/3  |              | Opt., Cloth             | 4             |                                   |          |                           |  |                                  |  |                                      | Opt., Cloth | 4          | 200.00 Pair               |                                  |           |
|                  | Pro Partner              | Powered Ac. Sus.                             | 8                       |          |                           | 1¼     | Cone                     | W,T      | 55-22 ±3     |       | Inc.   | 2k            |  |              | Black Vinyl             | 17            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 17         | 470.00 Pair               |                                  |           |
|                  | TSW 215-A                | Ac. Sus.                                     | 5¼                      |          |                           | ¾      | Dome                     | (2)W,T   | 72-40 ±3     | 88    | 10   | 5k            | 6/   | 20 x 10 x 8  | Black Vinyl             | 17            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 17         | 430.00 Pair               |                                  |           |
|                  | TSW 415-A                | Ac. Sus.                                     | 8                       |          |                           | ¾      | Dome                     | (2)W,T   | 44-40 ±3     | 90.5  | 10   | 3.8k          | 6/   | 30 x 12 x 12 | Black Vinyl             | 31½           |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 31½        | 360.00 Pair               |                                  |           |
|                  | TSW 115P-A               | Powered Ac. Sus.                             | 4                       |          |                           | ¾      | Dome                     |          |              |       | Inc.   |               |  | 11 x 7 x 7   | Black Vinyl             | 11            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 11         | 400.00 Pair               |                                  |           |
|                  | TSW 315-A                | Ac. Sus.                                     | (2)6½                   |          |                           | ¾      | Dome                     |          | 48-40 ±3     | 89    | 10   | 400,5k        | 4/3.6  | 23 x 12 x 12 | Black Vinyl             | 30½           |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 30½        | 550.00 Pair               |                                  |           |
|                  | TSW 710-A                | Ac. Sus.                                     | (2)8                    | 6½       | Cone                      | ¾      | Dome                     |          | 40-40 ±3     | 90    | 15   | 250,5k        | 4/2.9  | 39 x 14 x 13 | Black Vinyl             | 46            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 46         | 1300.00 Pair              |                                  |           |
|                  | Active Partner           | Powered Ac. Sus.                             | 4                       |          |                           | 2      | Cone                     |          |              |       | Inc.   |               |  | 6 x 11 x 8   | Opt., Plast.            | Opt., Knit    |                                   |          |                           |  |                                  |  |                                      | Opt., Knit  |            | 270.00 Pair               |                                  |           |
|                  | STC 660 Subwoofer System | Ac. Sus. Sat. & Series-Tuned Cavity Subwoof. | 6                       | 4        | Cone                      | ¾      | Dome                     |          |              |       |  |               |  | Three Pieces | Black Vinyl             | Black Knit    | 39 Sys.                           |          |                           |  |                                  |  |                                      |             | Black Knit | 39 Sys.                   | 645.00 Sys.                      |           |
|                  | TSW 110-A                | Ac. Sus.                                     | 6½                      |          |                           | ¾      | Dome                     |          | 68-40 ±3     | 88    | 10   | 5k            | 8/5  | 15 x 10 x 8  | Black Vinyl             | 14            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 14         | 280.00 Pair               |                                  |           |
|                  | TSW 210-A                | Ac. Sus.                                     | 8                       |          |                           | ¾      | Dome                     |          | 54-40 ±3     | 87    | 10   | 5k            | 8/6  | 17 x 10 x 8  | Black Vinyl             | 15            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 15         | 380.00 Pair               |                                  |           |
|                  | TSW 310-A                | Ac. Sus.                                     | 10                      |          |                           | ¾      | Dome                     |          | 45-40 ±3     | 89    | 10   | 3.8k          | 6/4  | 28 x 12 x 12 | Black Vinyl             | 35½           |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 35½        | 540.00 Pair               |                                  |           |
|                  | TSW 410-A                | Ac. Sus.                                     | 8                       | 6½       | Cone                      | ¾      | Dome                     |          | 46-40 ±3     | 86    | 10   | 450,3.8k      | 4/3  | 24 x 12 x 12 | Black Vinyl             | 30½           |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 30½        | 600.00 Pair               |                                  |           |
|                  | TSW 510-A                | Ac. Sus.                                     | 10                      | 6½       | Cone                      | ¾      | Dome                     |          | 44-40 ±3     | 87    | 15   | 700,5k        | 4/3.6  | 30 x 14 x 13 | Black Vinyl             | 49            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 49         | 800.00 Pair               |                                  |           |
|                  | TSW 610-A                | Ac. Sus.                                     | 12                      | 6½       | Cone                      | ¾      | Dome                     |          | 40-40 ±3     | 87    | 15   | 700,5k        | 4/3.6  | 33 x 14 x 13 | Black Vinyl             | 57            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 57         | 1000.00 Pair              |                                  |           |
|                  | TSW 810-A                | Ac. Sus.                                     | (2)10                   | (2)6½    | Cones                     | 1      | Dome                     |          | 33-32 ±3     | 87    | 25   | 350,4k        | 4/2.8  | 42 x 16 x 19 | Black Vinyl             | 95            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 95         | 1900.00 Pair              |                                  |           |
|                  | TSW 910-A                | Ac. Sus.                                     | (2)12                   | 8, (2)6½ | Cones                     | 1      | Dome                     |          | 28-32 ±3     | 87    | 35   | 200,550, 5.5k | 4/3.2  | 53 x 16 x 19 | Black Vinyl             | 140           |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 140        | 2200.00 Pair              |                                  |           |
|                  | Powered Partner          | Powered Ac. Sus.                             | 4                       |          |                           | 1      | Cone                     | W        | 50-25 ±3     |       | Inc.   |               |  | 6 x 11 x 8   | Black Alum.             | Black Knit    | 7                                 |          |                           |  |                                  |  |                                      |             | Black Knit | 7                         | 400.00 Pair                      |           |
|                  | Rock Partner             | Ac. Sus.                                     | 8                       |          |                           | 1¼     | Cone                     |          | 65-22 ±3     | 88    | 10   | 2k            | 8/   | 15 x 10 x 9  | Black Vinyl             | 15            |                                   |          |                           |  |                                  |  |                                      | Black Vinyl | 15         | 300.00 Pair               |                                  |           |
|                  | Environmental Partner    | Ac. Sus.                                     | 4                       |          |                           | 1      | Cone                     |          | 95-25 ±3     | 88    | 7  | 3k            | 6/4  | 6 x 11 x 8   | Black Alum.             | 6             |                                   |          |                           |  |                                  |  |                                      | Black Alum. | 6          | 300.00 Pair               |                                  |           |
| ARANT            | A-60                     | Vented                                       | 6½                      |          |                           | 1      | Dome                     |          | 49-22 ±3     | 89    | 12   | 2.5k          | 8/5  |              | Oiled Wal.              | Black Knit    |                                   |          |                           |  |                                  |  |                                      | Oiled Wal.  | Black Knit |                           | 285.00 Pair                      |           |
|                  | A-80                     | Vented                                       | 8                       |          |                           | 1      | Dome                     |          | 38-22 ±3     | 91    | 12   | 2k            | 6/4  |              | Oiled Wal.              | Black Knit    |                                   |          |                           |  |                                  |  |                                      | Oiled Wal.  | Black Knit |                           | 490.00 Pair                      |           |
|                  | A-140                    | Pas. Rad.                                    | 6½                      |          |                           | 1      | Dome                     |          | 32-22 ±4     | 93    | 12   | 2.7k          | 8/5  |              | Oiled Wal.              | Black Knit    |                                   |          |                           |  |                                  |  |                                      | Oiled Wal.  | Black Knit |                           | 550.00 Pair                      |           |
|                  | A-200                    | Vented                                       | 10                      | 4½       | Dome                      | 1      | Dome                     |          | 34-22 ±3     | 92    | 15   | 800,3.5k      | 6/4  |              | Oiled Wal.              | Black Knit    |                                   |          |                           |  |                                  |  |                                      | Oiled Wal.  | Black Knit |                           | 770.00 Pair                      |           |

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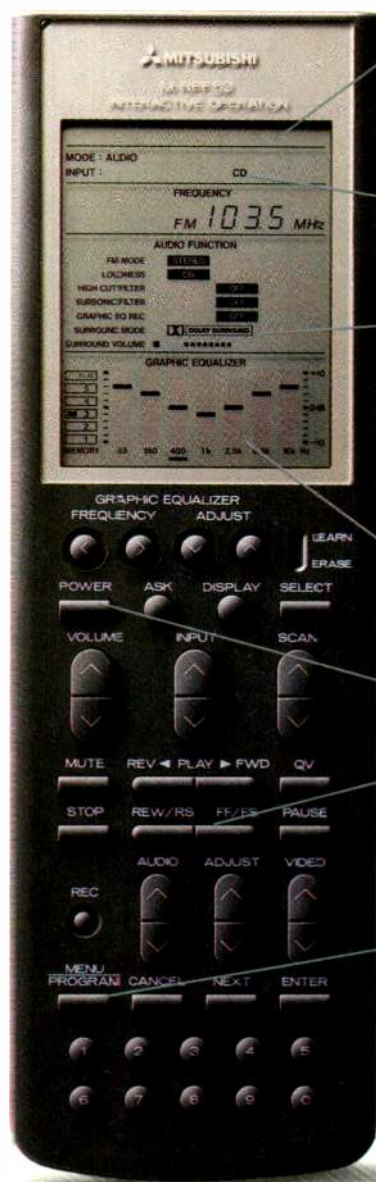


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# LOUDSPEAKERS

| MANUFACTURER           | Model                   | Design Principle     | Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Superwoofer = ST | Anechoic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish            | Grille Color and Material | Weight, Lbs. | Price, \$            |
|------------------------|-------------------------|----------------------|--------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|--|--|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------------|---------------------------|--------------|----------------------|
| ARCAM                  | One +                   | Bass Ref.            | 8                        |                         |                           | 1             | Dome                     |              |  | 35-20  | 89                      | 30                                | 2.5k                      | 8/6                              | 10 x 13 x 20                         | Wal.              | Black Foam                | 28           | 799.95 Pair          |
|                        | Two +                   | Bass Ref.            | 8                        |                         |                           | 3/4           | Dome                     |              |  | 42-20  | 88                      | 30                                | 3k                        | 8/6                              | 9 x 11 x 15                          | Wal.              | Black Foam                | 18           | 599.95 Pair          |
|                        | Three +                 | Bass Ref.            | 5 1/4                    |                         |                           | 1/2           | Dome                     |              |  | 47-20  | 88                      | 25                                | 3.5k                      | 8/5                              | 7 x 10 x 13                          | Vinyl             | Black Foam                | 11           | 349.95 Pair          |
| ARISTON                | "Q"                     | Bass Ref.            | 6                        |                         |                           | 1 1/2         | Dome                     |              |  | 38-20 $\pm$ 3                                    | 85                      | 30                                |                           | 8/                               | 14 x 10 x 10                         | Black             | Black Foam                | 19           | 650.00 Pair          |
|                        | Image MKII              | Bass Ref.            | 6 3/4                    |                         |                           | 3/4           | Dome                     |              |  | 45-20 $\pm$ 3                                    | 88                      | 20                                |                           | 6/                               | 16 x 8 x 10                          | Black Vinyl       | Black Foam                | 15           | 440.00 Pair          |
| ASB                    | AB-150                  | Ac. Sus.             | 6                        |                         |                           | 1             | Dome                     |              |  | 70-20 $\pm$ 3                                    | 88                      | 20                                | 2k                        | 8/6                              |                                      | Oiled Wal.        | Black Knit                | 30           | 250.00 Pair          |
|                        | AB-250                  | Ac. Sus.             | 6                        |                         |                           | 1             | Dome                     |              |  | 60-20 $\pm$ 3                                    | 90                      | 20                                | 2k                        | 8/6                              | 8 x 12 x 7                           | Oiled Wal.        | Black Knit                | 34           | 400.00 Pair          |
|                        | AB-650                  | Ac. Sus.             | 6                        |                         |                           | 1             | Dome                     |              |  | 45-20 $\pm$ 3                                    | 90                      | 20                                | 2k                        | 8/6                              | 10 x 16 x 8                          | Oiled Wal.        | Black Knit                | 60           | 800.00 Pair          |
|                        | AB-750                  | Ac. Sus.             | 8                        | 4 1/2                   | Cone                      | 1             | Dome                     |              |  | 38-20 $\pm$ 3                                    | 90                      | 30                                | 100,2k                    | 8/6                              | 14 x 25 x 12                         | Oiled Wal.        | Black Knit                | 80           | 1000.00 Pair         |
|                        | SR-I                    | Trans. Line          | (2)6                     | 2                       | Dome                      | 1             | Dome                     |              |  | 32-20 $\pm$ 3                                    | 90                      | 40                                | 400,5k                    | 8/6                              | 12 x 44 x 14                         | Oiled Wal.        | Black Knit                | 80           | 2800.00 Pair         |
|                        | SR-II                   | Trans. Line          | (2)8                     | (2)2                    | Domes                     | 1             | Dome                     |              |  | 28-20 $\pm$ 3                                    | 91                      | 40                                | 400,5k                    | 8/6                              | 12 x 60 x 16                         | Oiled Wal.        | Black Knit                | 90           | 4500.00 Pair         |
| A & S SPEAKERS         | AP-52                   | Inf. Baf.            | 5 1/4                    |                         |                           | 1             | Dome                     |              |  | 90-20 $\pm$ 3                                    | 86                      | 20                                | 3.5k                      | 8/6                              | 10 x 6 x 5                           | Oak               | Opt.                      | 10           | 250.00 Pair          |
|                        | Dyno-Monitor            | Inf. Baf.            | 6 1/2                    |                         |                           | 1 1/2         | Dome                     |              |  | 70-22 $\pm$ 3                                    | 88                      | 30                                | 2.5k                      | 8/6                              | 14 x 11 x 10                         | Opt.              | Opt.                      | 18           | 485.00 Pair          |
|                        | Ken's Ten               | Bass Ref.            | 10                       | 5 1/4                   | Cone                      | 1             | Dome                     |              |  | 39-22 $\pm$ 3                                    | 90                      | 40                                | 400,4k                    | 8/7                              | 25 x 15 x 12                         | Opt.              | Opt.                      | 43           | 540.00 Pair          |
|                        | Baby-Boomer             | Ac. Sus. Subwoof.    | 12                       |                         |                           |               |                          |              |  | 37-150 $\pm$ 3                                   | 90                      | 40                                | Set.                      | 6/5                              | 16 x 18 x 19                         | Opt.              | Opt.                      | 42           | 299.95 Pair          |
|                        | Power-Tower             | Ac. Sus.             | 12                       | 5 1/4                   | Cone                      | 1             | Dome                     |              |  | 42-19 $\pm$ 3                                    | 90                      | 50                                | 300,3k                    | 8/7                              | 37 x 15 x 11                         | Opt.              | Opt.                      | 53           | 660.00 Pair          |
|                        | Tower-D Dynaudio SW-3.5 | Ac. Sus.             | 12                       | 3                       | Dome                      | 1 1/4, 7/8    | Domes                    |              |  | 42-30 $\pm$ 3                                    | 91                      | 50                                | 500,4k, 10k               | 8/6                              | 37 x 15 x 11                         | Opt.              | Opt.                      | 57           | 1200.00 Pair         |
| ATC                    | SCM50                   | Ported               | 9                        | 3                       | Dome                      | 1             | Dome                     |              |  | 30-20  | 85                      | 50                                | 400,4k                    | 8/6                              | 28 x 16 x 12                         | Opt.              | Black Knit                | 85           | 6000.00 Pair         |
|                        | SCM100                  | Ported               | 12                       | 3                       | Dome                      | 1             | Dome                     |              |  | 25-20  | 88                      | 50                                | 350,4k                    | 8/6                              | 33 x 19 x 16                         | Opt.              | Black Knit                | 115          | 8000.00 Pair         |
|                        | SCM50A                  | Triamped             | 9                        | 3                       | Dome                      | 1             | Dome                     |              |  | 30-20  |                         | 350 Inc.                          | 380,3.8k                  | 10k                              | 28 x 16 x 12                         | Opt.              | Black Knit                | 95           | 9000.00 Pair         |
|                        | SCM100A                 | Triamped             | 12                       | 3                       | Dome                      | 1             | Dome                     |              |  | 25-20  |                         | 350 Inc.                          | 380,3.8k                  | 10k                              | 33 x 19 x 16                         | Opt.              | Black Knit                | 125          | 11,000.00 Pair       |
|                        | SCM200                  | Triamped, Ported     | (2)12                    | 3                       | Dome                      | 1 1/4         | Dome                     |              |  | 20-20  | 91                      | 1k                                | Adj.                      |                                  | 33 x 39 x 16                         | Opt.              | Black Knit                | 300          | 7000.00 Pair         |
|                        | SCM400                  | Triamped, Ported     | (4)12                    | 3                       | Dome                      | 1 1/4         | Dome                     |              |  | 20-20  | 94                      | 1.6k                              | Adj.                      |                                  | 67 x 39 x 16                         | Opt.              | Opt.                      | 450          | 9000.00 Pair         |
|                        | SCM500                  | Triamped, Ported     | (2)15                    | 3                       | Dome                      | 1 1/4         | Dome                     |              |  | 20-20  | 94                      | 1.2k                              | Adj.                      |                                  | 54 x 35 x 22                         | Opt.              | Opt.                      | 400          | 8000.00 Pair w/Xover |
| A + T ELECTRO-ACOUSTIC | TMR-220                 | Trans. Line          | (2)10                    | 6                       | Cone                      | (2)1 1/2, 1   | Domes, Ribbon            |              |  | 15-45  | 89                      | 40                                | 150,1k, 5k, 20k           | 5/2                              | 63 x 17 x 21                         | Black Oak         | Black Knit                | 165          | 11,000.00 Pair       |
|                        | TMR-160                 | Trans. Line          | (2)10                    | 6                       | Cone                      | 1 1/2, 1      | Domes                    |              |  | 18-35  | 85                      | 40                                | 200,1k, 6k                | 5/2                              | 48 x 16 x 19                         | Oak               | Black Knit                | 121          | 5000.00 Pair         |
|                        | TMR-120                 | Trans. Line          | 10                       | 5                       | Cone                      | 1 1/2, 1      | Domes                    |              |  | 22-35  | 86                      | 40                                | 200,900, 4k               | 5/2                              | 41 x 14 x 16                         | Oak               | Black Knit                | 82           | 3000.00 Pair         |
|                        | TMR-80                  | Trans. Line          | 8                        | 1 1/2                   | Dome                      | 1             | Dome                     |              |  | 25-35  | 88                      | 40                                | 900,5k                    | 5/2                              | 36 x 12 x 14                         | Wal.              | Black Knit                | 55           | 2000.00 Pair         |
|                        | TMR-60                  | Trans. Line          | 8                        | 4                       | Cone                      | 1             | Dome                     |              |  | 30-30  | 88                      | 40                                | 700,3.5k                  | 5/2                              | 31 x 10 x 12                         | Mahog             | Black Knit                | 38           | 1500.00 Pair         |
|                        | P-30                    | Tuned Port           | 10                       | 4                       | Cone                      | 1             | Dome                     |              |  | 20-30  | 90                      | 40                                | 350,3k                    | 6/2                              | 22 x 12 x 13                         | Oak               | Black Knit                | 38           | 1700.00 Pair         |
| AUDIO CONCEPTS         | S2                      | Aperiodic            | 7                        |                         |                           | 1             | Dome                     |              |  | 65-20 $\pm$ 3                                    | 88                      | 30                                | 2.8k                      | 8/6                              | 16 x 10 x 8                          | Opt., Unfin. Wood | Black Knit                | 16           | 219.90 Pair          |
|                        | C2                      | Aperiodic            | 8                        |                         |                           | 1             | Dome                     |              |  | 48-20 $\pm$ 3                                    | 89                      | 30                                | 2.8k                      | 8/6                              | 19 x 12 x 11                         | Opt., Unfin. Wood | Black Knit                | 27           | 269.90 Pair          |
|                        | Compact Monitor         | Aperiodic            | 7                        |                         |                           | 1             | Dome                     |              |  | 43-20 $\pm$ 3                                    | 87                      | 40                                | 2.8k                      | 8/6                              | 16 x 10 x 8                          | Opt., Unfin. Wood | Black Knit                | 19           | 419.90 Pair          |
|                        | G2                      | Aperiodic            | 10                       | 4                       | Cone                      | 1             | Dome                     |              |  | 36-20 $\pm$ 3                                    | 89                      | 40                                | 900,6k                    | 8/6                              | 29 x 15 x 13                         | Opt., Unfin. Wood | Black Knit                | 44           | 469.90 Pair          |
|                        | Laser                   | Aperiodic            | (2)8                     |                         |                           | 1             | Dome                     |              |  | 48-20 $\pm$ 3                                    | 93                      | 20                                | 3k                        | 4/3                              | 36 x 10 x 13                         | Opt., Unfin. Wood | Black Knit                | 50           | 439.90 Pair          |
|                        | M2                      | Aperiodic            | 12                       | 4                       | Cone                      | 1             | Dome                     |              |  | 30-20 $\pm$ 3                                    | 89.5                    | 45                                | 900,6k                    | 8/6                              | 36 x 14 x 12                         | Opt., Unfin. Wood | Black Knit                | 59           | 599.90 Pair          |
|                        | Super Titan             | Aperiodic            | (2)12                    | 7                       | Cone                      | 1             | Dome                     |              |  | 30-20 $\pm$ 3                                    | 92.5                    | 50                                | 275,5k                    | 4/3                              | 37 x 17 x 17                         | Opt., Unfin. Wood | Black Knit                | 110          | 1099.90 Pair         |
|                        | Pulse                   | Subwoof.             | (2)10                    |                         |                           |               |                          |              |  | 34-400 $\pm$ 3                                   | 87                      | 75                                | 150 (Opt.)                | 4/3                              | 19 x 15 x 17                         | Opt., Unfin. Wood | Black Knit                | 60           | 449.90 Pair          |
|                        | Saturn                  | Slot Loaded Subwoof. | (2)12                    |                         |                           |               |                          |              |  | 22-200 $\pm$ 3                                   | 88                      | 75                                | 150 (Opt.)                | 4/3                              | 44 x 13 x 13                         | Opt., Unfin. Wood | Black Knit                | 85           | 639.90 Pair          |

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# LOUDSPEAKERS

| MANUFACTURER                    | Model                 | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Supertweeter = ST | Anechoic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt 1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish            | Grille Color and Material | Weight, Lbs. | Price, \$             |
|---------------------------------|-----------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|---|--|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------------|---------------------------|--------------|-----------------------|
| AUDIO CONCEPTS (Continued)      | Sapphire              | Aperiodic                                  | 7                       |                           |               | 1                        | Inv. Dome    |   | 65-20 $\pm$ 3                                    | 90                      | 50                                | 2k                        | 6/4                              | 35 x 13 x 13                         | Opt., Unfin. Wood | Black Knit                | 42           | 849.90 Pair           |
|                                 | Orion                 | Slotted                                    | 12                      | 5 1/4                     | Cone          | 1                        | Inv. Dome    |   | 35-20 $\pm$ 3                                    | 89                      | 50                                | 200, 4.5k                 | 4/3                              | 56 x 14 x 13                         | Opt., Unfin. Wood | Black Knit                | 125          | 1199.90 Pair          |
|                                 | JR1 Wall Speaker      | In-Wall                                    | 7                       |                           |               | 1                        | Dome         |   | 55-20 $\pm$ 3                                    | 89                      | 30                                | 2.8k                      | 8/6                              | 16 x 10 x 3                          | Opt., Unfin. Wood | Black Knit                | 7            | 299.90 Pair           |
| AUDIODATA                       | Bijou                 | Pas. Rad.                                  | 7                       |                           |               | 3/4                      | Dome         |   | 48-20 $\pm$ 2                                    | 91                      | 20                                |                           | 8.5/5                            | 10 x 20 x 40                         | Opt., Wood        | Opt.                      | 61           | 2950.00 Pair          |
|                                 | Petite                | Pas. Rad. Sat.                             | 7                       |                           |               | 3/4                      | Dome         |   | 75-20 $\pm$ 2                                    | 86                      | 15                                |                           | 8/7                              | 11 x 12 x 14                         | Opt., Wood        | Opt.                      | 23           | 1495.00 Pair          |
| AUDIO EXKLUSIV                  | P3                    | ES   |                         |                           |               |                          |              |   | 48-20 $\pm$ 4                                    | 103                     |                                   |                           | 4/4                              | 13 x 79 x 3                          | Opt., Mrbl.       | Opt.                      | 80           | 5995.00 Pair          |
|                                 | Tubular Bell          | Pas. Rad.                                  | 7                       |                           |               | 2                        |              |   | 25-20 $\pm$ 4                                    |                         |                                   |                           | 8/4                              | 10 x 33 x 10                         | Opt., Mrbl.       | Opt.                      | 45           | 1595.00 Pair          |
| AUDIO PRO                       | B1-45                 | Powered Subwoof.                           | 10                      |                           |               |                          |              |   | 30-200 $\pm$ 1.5                                 | 102                     | Inc.                              | Var.                      |                                  | 20 x 15 x 15                         | Opt.              |                           | 48           | 985.00                |
|                                 | B2-70                 | Powered Subwoof.                           | (2)8                    |                           |               |                          |              |   | 20-200 $\pm$ 1.5                                 | 103                     | Inc.                              | Var.                      |                                  | 24 x 22 x 18                         | Opt.              | Black Cloth Foam          | 90           | 1450.00               |
|                                 | A4-14 MKII            | Powered                                    | (2)5                    | 4 1/2                     | Cone          | 1                        | Dome         |   | 30-20 $\pm$ 1.5                                  | 113                     | Inc.                              | 300, 2.5k                 |                                  | 20 x 12 x 10                         | Opt.              |                           | 82 Pair      | 1950.00 Pair          |
| AUDIOSOURCE                     | LS One                | Inf. Baf.                                  | 4                       |                           |               | 1                        | Dome         |   | 80-20  | 87                      | 10                                | 2.5k                      | 4/3                              | 7 x 5 x 5                            | Black Metal White | Black Metal White         | 5 1/4        | 199.95 Pair           |
|                                 | LS One W/T            | Inf. Baf.                                  | 4                       |                           |               | 1                        | Dome         |   | 80-20  | 87                      | 10                                | 2.5k                      | 4/3                              | 7 x 5 x 5                            | Black Metal White | Black Metal White         | 5 1/2        | 219.95 Pair           |
|                                 | LS One Walnut/Oak     | Inf. Baf.                                  | 4                       |                           |               | 1                        | Dome         |   | 70-20  | 87                      | 10                                | 2.5k                      | 4/3                              | 8 x 5 x 5                            | Opt., Wood        | Black Metal White         | 5 1/4        | 229.95 Pair           |
|                                 | LS Eleven             | Inf. Baf.                                  | (2)4                    | 4                         | Cone          | 1                        | Dome         |   | 60-20  | 89                      | 10                                | 600, 3k                   | 4/3                              | 15 x 5 x 6                           | Opt.              | Black Metal White         | 8 3/4        | 229.95 Pair           |
|                                 | LS Twelve             | Inf. Baf.                                  | 6 1/2                   |                           |               | 1                        | Dome         |   | 40-20  | 93                      | 10                                | 3k                        | 4/3                              | 23 x 9 x 8                           | Opt.              | Black Metal White         | 17 1/2       | 359.95 Pair           |
|                                 | LS Two                | Inf. Baf.                                  | 5 1/2                   |                           |               | 1                        | Dome         |   | 60-20  | 89                      | 10                                | 2.5k                      | 6/4                              | 9 x 6 x 5                            | Opt.              | Black Metal White         | 5 3/4        | 259.95 Pair           |
| AUDIRE                          | Image I               | Planar Ribbon                              |                         |                           |               |                          |              |   | 30-20 $\pm$ 3                                    | 92                      | 50                                |                           | 2/2                              | 72 x 36 x 3                          | Oiled Wal.        | Black Knit                | 150          | 6500.00 Pair          |
|                                 | Image II              | Planar Ribbon                              |                         |                           |               |                          |              |   | 35-20  | 90                      | 75                                |                           | 3/3                              | 72 x 32 x 3                          | Oiled Wal.        | Black Knit                | 125          | 4500.00 Pair          |
|                                 | Image III             | Planar Ribbon                              |                         |                           |               |                          |              |   | 40-20  | 88                      | 75                                |                           | 8/8                              | 60 x 24 x 2                          | Oiled Wal.        | Brown Knit                | 60           | 2700.00 Pair          |
|                                 | Image IV              | Planar Ribbon                              |                         |                           |               |                          |              |   | 50-20 $\pm$ 3                                    | 86                      | 75                                |                           | 4/4                              | 24 x 60 x 2                          | Oiled Wal.        | Black Knit                | 50           | 1500.00 Pair          |
| AVALON ACOUSTICS                | Ascent MK. II         | Inf. Baf.                                  | 11                      | 2                         | Dome          | 1                        | Dome         | No  | 36-24 $\pm$ 2                                    | 88                      | 50                                |                           | 6.5/5                            | 13 x 18 x 45                         | Maple             | Black Knit                | 220          | 13,500.00 Pair        |
|                                 | Eclipse               | Inf. Baf.                                  | 8 1/2                   |                           |               | 1                        | Dome         |   | 46-24 $\pm$ 2                                    | 86                      | 30                                |                           | 6.5/5                            | 10 x 15 x 39                         | Maple             | Black Knit                | 80           | 5600.00 Pair          |
| AXIDM AUDIO                     | AX 1.5 Bookshelf      | Tuned Port                                 | 6 1/2                   |                           |               | 3/4                      | Dome         |   | 50-22 $\pm$ 2                                    | 89                      | 15                                | 3.5k                      | 8/6                              | 15 x 8 x 8                           | Opt., Oak         | Black Knit                | 30           | 299.00 Pair           |
|                                 | AX 1.5                | Tuned Port                                 | 6 1/2                   |                           |               | 3/4                      | Dome         |   | 45-22 $\pm$ 2                                    | 89                      | 15                                | 3.5k                      | 8/6                              | 19 x 8 x 8                           | Opt., Oak         | Black Knit                | 36           | 339.00 Pair           |
|                                 | AX 2 Bookshelf        | Tuned Port                                 | 8                       |                           |               | 1                        | Dome         |   | 43-22 $\pm$ 2                                    | 89                      | 15                                | 3.2k                      | 8/6                              | 19 x 10 x 10                         | Opt., Oak         | Black Knit                | 44           | 429.00 Pair           |
|                                 | AX 2                  | Tuned Port                                 | 8                       |                           |               | 1                        | Dome         |   | 40-22 $\pm$ 2                                    | 89                      | 15                                | 3.2k                      | 8/6                              | 24 x 10 x 10                         | Opt., Oak         | Black Knit                | 50           | 559.00 Pair           |
|                                 | AX 3                  | Tuned Port                                 | 8.5                     |                           |               | 1                        | Dome         |   | 36-22 $\pm$ 2                                    | 88                      | 30                                | 3k                        | 6/4                              | 36 x 10 x 10                         | Opt., Oak         | Black Knit                | 66           | 849.00 Pair           |
|                                 | AX 1.5 Wallmount      | In-Wall                                    | 6 1/2                   |                           |               | 3/4                      | Dome         |   | 45-22 $\pm$ 2                                    | 89                      | 15                                | 3.5k                      | 8/6                              | 14 x 19 x 1                          | Opt., Oak         | Black Knit                | 15           | 339.00 Pair           |
|                                 | AX 5 Reference        |  | 10.5                    |                           |               | 1                        | Dome         |   | 29-22 $\pm$ 2                                    | 87                      | 40                                | 3k                        | 6/4                              | 36 x 12 x 12                         | Opt., Oak         | Black Knit                | 80           | 1699.00 Pair          |
|                                 | AX 1 Reference        | Tuned Port                                 | 5                       |                           |               | 1                        | Dome         |   | 70-22 $\pm$ 2                                    | 87                      | 30                                | 3k                        | 6/4                              | 11 x 6 x 6                           | Opt., Oak         | Black Knit                | 30           | 599.00 Pair           |
|                                 | AX SUB Reference      | Subwoof.                                   | (2)10                   |                           |               |                          |              |   | 29-250 $\pm$ 3                                   | 87                      | 40                                | Sel.                      | 6/4                              | 15 x 33 x 16                         | Opt., Oak         | Black Knit                | 80           | 1099.00 Pair          |
|                                 | AX SUB Center Channel | Subwoof. & Ctr. Channel                    | (2)10, 5                |                           |               | 1                        | Dome         |   | 29-22 $\pm$ 3                                    | 87                      | 40                                | 120, 250, 3k              | 6/4                              | 15 x 33 x 16                         | Opt., Oak         | Black Knit                | 90           | 1449.00 Pair          |
| BANG & OLUFSEN                  | Beovox 3000           | Bass Ref.                                  | 5                       |                           |               | 1                        | Dome         |   | 75-20 + 4, -8                                    | 87                      | 20                                | 3.5k                      | 8/8                              | 18 x 15 x 3                          | Steel             | Opt.                      | 16 Pair      | 348.00                |
|                                 | Beovox 5000           | Bass Ref.                                  | (2)5                    |                           |               | 1                        | Dome         |   | 60-20 + 4, -8                                    | 89                      | 20                                | 3.5k                      | 8/8                              | 18 x 34 x 3                          | Steel             | Opt.                      | 30 Pair      | 548.00                |
|                                 | Beolab 3000           | Powered Bass Ref.                          | 5                       |                           |               | 1                        | Dome         |   | 75-20 + 4, -8                                    |                         | Inc.                              | 3.5k                      | 47k                              | 18 x 21 x 3                          | Steel             | Opt.                      | 50 Pair      | 1695.00               |
|                                 | Beolab 5000           | Powered Bass Ref.                          | (2)5                    |                           |               | 1                        | Dome         |   | 60-20 + 4, -8                                    |                         | Inc.                              | 3.5k                      | 47k                              | 18 x 40 x 3                          | Steel             | Opt.                      | 78 Pair      | 2095.00               |
|                                 | Beovox Cona           | Subwoof.                                   | 8                       |                           |               |                          |              |   | 40-195   | 89                      | 20                                | 195                       | 8/8                              | 17 Dia. x 11                         | Opt.              | Opt.                      | 16 1/2 Pair  | 395.00                |
| BEAR LABS                       | Quadrupole Subwoofer  | Compr. Pas. Rad. Subwoof.                  | (2)12                   |                           |               |                          |              |   | 17-150 $\pm$ 2.5                                 | 90                      |                                   |                           | Sel.                             | Two Pieces Per Side                  | Opt.              | Opt.                      | 75 Each Pk.  | 2720.00 Sys. w/ Xover |
| BIB                             | Point-4               |  | 4                       |                           |               | 2 1/2                    | Cone         | W   |  | 50                      | 4k                                |                           | 4/                               | 8 x 5 x 5                            | Black Alum.       | Gray Mesh                 | 5 3/4        | 129.00 Pair           |
| BONDWELL INDUSTRIAL (Continued) | MA-100                | Dual Ported                                | 4 1/2                   |                           | Cone          | 1 1/2                    | Cone         |   | 70-16 $\pm$ 3                                    | 90                      |                                   |                           | 4/                               | 9 x 6 x 7                            | Gray Foam         | Opt., Black               | 7.7 Pair     | 129.95 Pair           |
|                                 | MA-100T               | Dual Ported                                | 4 1/2                   |                           | Cone          | 1 1/2                    | Cone         |   | 70-16 $\pm$ 3                                    | 90                      |                                   |                           | 4/                               | 9 x 6 x 7                            | Opt., Black       | Opt., Black               | 7.5 Pair     | 79.95 Pair            |

# **SUPER WOOFER<sup>TM</sup>** **SYSTEM**

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**COMPONENT SPEAKER SYSTEMS**



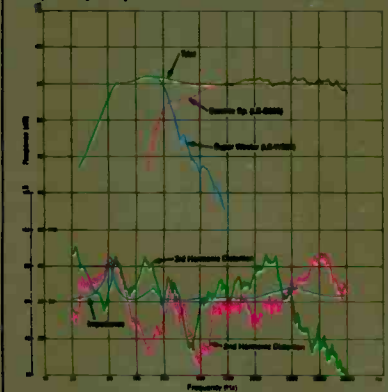
# SUPER WOOFER<sup>TM</sup> SYSTEM

## The Super Woofer

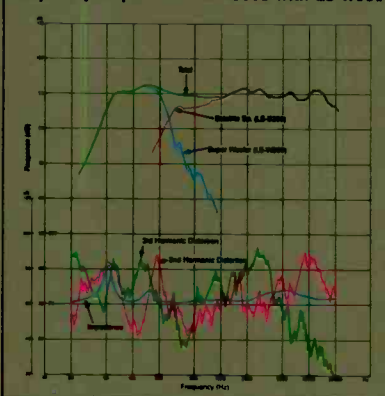
Recently, many manufacturers have introduced multiple cabinet speaker systems usually consisting of a pair of satellite speakers and at least one woofer cabinet. The main reason for this new influx of speaker systems is the changing living conditions in America. People are now living in more space efficient housing. There is just no room for gigantic lower speaker systems. These new multi-piece speaker systems allow the user to display the satellite speakers in a small area and to tuck the woofer section away out-of-sight. The best part of this concept in speaker design is the space that is saved without giving up the rich full sound of a large speaker enclosure. The problem is many manufacturers have settled for lighter bass reproduction in the smaller woofer cabinet. Kenwood has chosen not to settle for anything less than tight, thunderous bass reproduction. And that is just what you'll get with the LS-W900 and LS-W700 Super Woofers. They are designed specifically for deep penetrating bass reproduction, yet they are so compact that they can be installed almost anywhere. Outside, the enclosures look like a box with a single port. Inside, it is far from conventional. Dual low-range drivers are mounted on an internal partition between a bass emphasis chamber and a treble attenuation chamber. A tuned port carries the emphasized bass sound to the neighboring chamber which "tunes out" the unwanted higher frequency signal components. Therefore, the sound that emerges from the cabinet is pure deep bass—covering precisely the frequency range required for accurate sonic reproduction.

Inside the Super Woofer cabinet, incredible sound pressure levels are created. An ordinary woofer would not survive in this application. Therefore, special diaphragm materials and magnetic circuit construction are required. For the woofer diaphragm, these 8-inch low-range drivers (LS-W900) employ thick non-pressed cones—with lightness and high rigidity balanced by the internal loss required to suppress radiation of spurious harmonics (i.e. distortion). Likewise, precision engineered magnetic circuit and suspension construction extends linear response throughout the very low frequency range.

Frequency response for LS-S500 with LS-W900



Frequency response for LS-S300 with LS-W900

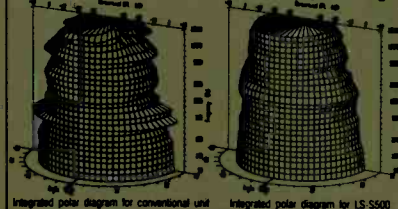


## The Satellites

For a clear soundstage the satellite speakers must provide smooth frequency response and low distortion. However, their frequency extension and directional coverage are also critical. The LS-S500 achieves these goals in several unique ways.

First, the speaker cabinet's unusual shape minimizes standing waves inside the enclosure, while the rounded outside baffle contour suppresses edge diffraction and surface reflection, thereby avoiding secondary delayed radiation effects. The improvement in directional characteristics is apparent from the integrated polar diagrams shown here.

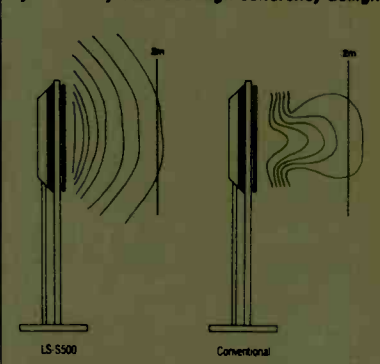
Integrated polar diagram shows smoothness of frequency coverage



Second, a soft dome tweeter with Kenwood's Spherical Wave Baffle is used. As its name suggests, this generates sound waves that radiate in a more ideally spherical pattern from the speaker surface. In a conventional system, tweeter sound waves tend to interfere with each other. In contrast, the spherical wave horn baffle output is highly regular, thereby retaining the important clues that carry

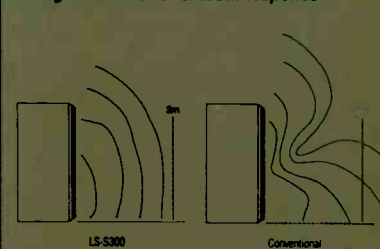
delicate ambience and instrumental timbre information to your ears.

Symmetrically balanced high coherency design



Third, there is the symmetrical arrangement of the single tweeter between two midrange units. In ordinary systems, the shape of the sound waves will vary depending on the frequency content of the signal. This upsets coherency, unnaturally highlighting the fact that more than one speaker unit is reproducing the audio spectrum. But with this new arrangement, a phase coherent wavefront is maintained whether the energy balance shifts to the tweeter or to the midrange units.

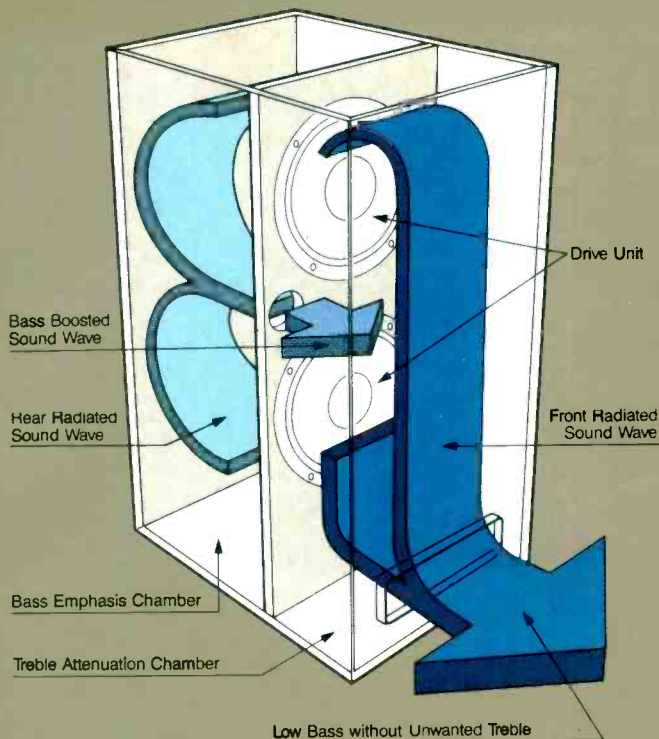
Pentagonal baffle for smooth response



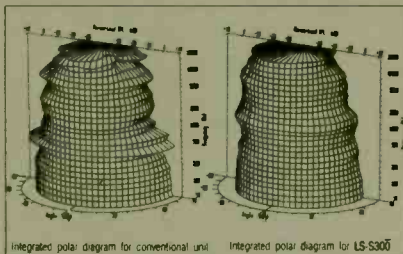
Fourth, the materials used in the construction of the midrange and tweeter diaphragms—advanced polypropylene cones and a polyamide dome, respectively, yield a smooth and accurate response. By carefully controlling the relationship between rigidity and internal loss, we have achieved smooth midrange and high frequency extension without the typical peak that is responsible for annoying strident colorations in superficially similar configurations. This means a natural sound that retains precision of voicing and transient response, the kind of satisfying sound that makes good music sound great.

Together, these four structural features contribute to a wider frequency range and more consistent sound distribution, without spurious output, resulting in a soundstage that is utterly convincing.

## Inside View of LS-W900 Dual Tuned Port Acoustic Bass Resonator



The LS-S300's remarkable semi-pentagonal enclosure minimizes standing waves in the cabinet interior, for better frequency response. Outside, the 5-sided baffle improves edge diffraction and surface reflection characteristics. It allows sound waves radiated from the front to travel smoothly to the rear, thereby minimizing phase deviations. This contributes to wider frequency range and more consistent sound distribution—the keys to outstanding soundstage imaging. The drive units themselves are designed for low distortion, featuring a polypropylene midrange and polyamide dome tweeter which is surrounded by Kenwood's Spherical Wave Baffle for uniform acoustic intensity without the muddying effects of frequency cancellation. Together with the Super Woofer, the system as a whole provides superb sonic clarity, and freedom from tonal colorations. The frequency response graph reveals the difference.

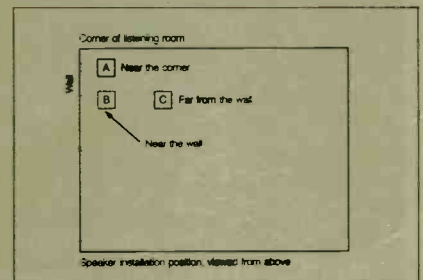


Some manufacturers feel that the smaller the satellite speakers the better. In the process of sizing down the satellites, they have also sized down the sound quality. Some systems are almost totally lacking in midrange. This means voices do not have the richness and clarity that they should, horns tend to sound thin and harsh and there's nothing grand about a grand piano without midrange definition. Once again Kenwood has taken the no compromise approach. A 4-1/2 inch polypropylene midrange driver and a 1 inch soft dome tweeter are housed in an enclosure that is slightly more than a foot tall. Small enough to fit on a standard bookshelf but big enough to house the necessary components for accurate sonic reproduction.

## The System

Conventional speakers use an electronic crossover network to separate the bass from the midrange and treble signals. But the Kenwood Super Woofer tackles the problem by employing proven acoustical principles—the physical laws concerning the behavior of sound pressure waves. In technical terms, the Super Woofer enclosure acts as an acoustic filter. It removes the unwanted higher frequencies, leaving only the pure deep bass. The result is not just a reduction in low range distortion, but also a greater sonic clarity in total system output.

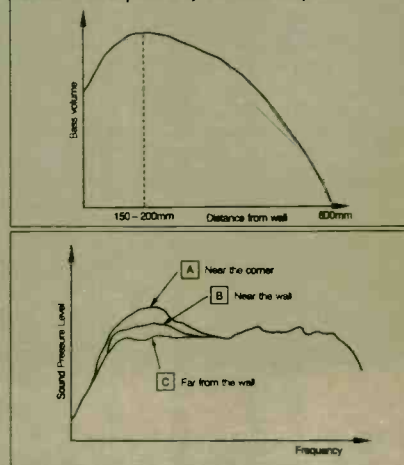
Although the position of the Super Woofer itself is not critical to stereo reproduction, it does affect the overall bass response. This characteristic gives you the chance to actively adjust the degree of bass output to suit your taste or the kind of music being played. For example, you can increase the bass energy by moving the Super Woofer cabinet closer to a wall. For even more low range emphasis, simply put it near a corner of the listening room. It's amazingly versatile—a little experimentation will be amply rewarded by big gains in system fidelity.



The best part is you can install this incredible system in your listening room with far greater convenience and flexibility than ever before. Connections are simple. You don't need a special amplifier, special output terminals, or crossover network. And heavy gauge audiophile wiring connects easily for extra fidelity in signal transmission from your amplifier.

Kenwood's unique technical approach delivers big speaker sound without taking up big speaker space. So you get your kind of design plus your kind of listening satisfaction. We call it the Kenwood Super Woofer System, and you can choose from four different system configurations. These compact 3-piece systems blend with your interior while delivering a sound that until now was available only in large bulky enclosures. It's the sound and style of tomorrow for the way you live today.

### Effect of wall proximity on bass output





# SPECIFICATIONS

## LS-W9010 (LS-W900 + LS-S500)

| Speakers               | LS-W900   | LS-S500   |
|------------------------|---|---|
| System                 | 1-Way, 2-Speaker Super Woofer System                                    | 2-Way, 3-Speaker Satellite Speaker for Super Woofer System              |
| Type                   | Dual Tuned Port Acoustic Bass Resonator                                 | Acoustic Air-Suspension   |
| Mounted Drivers        |   |   |
| Low Frequency Driver   | 8" Cone Type x 2  | —   |
| Mid-Frequency Driver   | —   | 4-1/2" Polypropylene Cone Type x 2                                      |
| High Frequency Driver  | —   | 1" Dome Type  |
| Enclosure              | Floor Standing Type   | Acoustic Air-Suspension Floor Standing Type                             |
| Maximum Input Power    | 180Wch as Complete System   | 180Wch as Complete System   |
| Sensitivity            | 89dB/W/m  | 89dB/W/m  |
| Rated Input Power      | 90Wch as Complete System  | 90Wch as Complete System  |
| Frequency Response     | 30Hz—20kHz as Complete System   | 30Hz—20kHz as Complete System   |
| Impedance              | 8 ohms  | 8 ohms  |
| Dimensions (W x H x D) | 9-13/16" x 23-1/4" x 14-5/8"  | 10-1/4" x 40-7/8" x 11"   |
| Weight (Net)           | 28.6 lbs  | 15.4 lbs  |
| Enclosure Finish       | High Density Particle Board Laminated with Simulated Wood Grain Finish. | High Density Particle Board Laminated with Simulated Wood Grain Finish. |

## LS-W7010 (LS-W700 + LS-S500)

| Speakers               | LS-W700   | LS-S500   |
|------------------------|---|---|
| System                 | 1-Way, 2-Speaker Super Woofer System                                    | 2-Way, 3-Speaker Satellite Speaker for Super Woofer System              |
| Type                   | Dual Tuned Port Acoustic Bass Resonator                                 | Acoustic Air-Suspension   |
| Mounted Drivers        |   |   |
| Low Frequency Driver   | 6-1/2" Cone Type x 2  | —   |
| Mid-Frequency Driver   | —   | 4-1/2" Polypropylene Cone Type x 2                                      |
| High Frequency Driver  | —   | 1" Dome Type  |
| Enclosure              | Floor Standing Type   | Acoustic Air-Suspension Floor Standing Type                             |
| Maximum Input Power    | 140Wch as Complete System   | 140Wch as Complete System   |
| Sensitivity            | 89dB/W/m  | 89dB/W/m  |
| Rated Input Power      | 70Wch as Complete System  | 70Wch as Complete System  |
| Frequency Response     | 30Hz—20kHz as Complete System   | 30Hz—20kHz as Complete System   |
| Impedance              | 8 ohms  | 8 ohms  |
| Dimensions (W x H x D) | 16-1/8" x 8-1/4" x 15-3/16"   | 10-1/4" x 40-7/8" x 11"   |
| Weight (Net)           | 22 lbs  | 15.4 lbs  |
| Enclosure Finish       | High Density Particle Board Laminated with Simulated Wood Grain Finish. | High Density Particle Board Laminated with Simulated Wood Grain Finish. |

## LS-W5010 (LS-W900 + LS-S300)

| Speakers               | LS-W900   | LS-S300   |
|------------------------|---|---|
| System                 | 1-Way, 2-Speaker Super Woofer System                                    | 2-Way, 2-Speaker Satellite Speaker for Super Woofer System              |
| Type                   | Dual Tuned Port Acoustic Bass Resonator                                 | Acoustic Air-Suspension   |
| Mounted Drivers        |   |   |
| Low Frequency Driver   | 8" Cone Type x 2  | —   |
| Mid-Frequency Driver   | —   | 4-1/2" Polypropylene Cone Type  |
| High Frequency Driver  | —   | 1" Dome Type  |
| Enclosure              | Floor Standing Type   | Acoustic Air-Suspension Floor Standing Type                             |
| Maximum Input Power    | 180Wch as Complete System   | 180Wch as Complete System   |
| Sensitivity            | 89dB/W/m  | 89dB/W/m  |
| Rated Input Power      | 90Wch as Complete System  | 90Wch as Complete System  |
| Frequency Response     | 30Hz—20kHz as Complete System   | 30Hz—20kHz as Complete System   |
| Impedance              | 8 ohms  | 8 ohms  |
| Dimensions (W x H x D) | 9-13/16" x 23-1/4" x 14-5/8"  | 8-3/8" x 12-13/16" x 6-1/4"   |
| Weight (Net)           | 28.6 lbs  | 6.6 lbs   |
| Enclosure Finish       | High Density Particle Board Laminated with Simulated Wood Grain Finish. | High Density Particle Board Laminated with Simulated Wood Grain Finish. |

## LS-W3010 (LS-W700 + LS-S300)

| Speakers               | LS-W700   | LS-S300   |
|------------------------|---|---|
| System                 | 1-Way, 2-Speaker Super Woofer System                                    | 2-Way, 2-Speaker Satellite Speaker for Super Woofer System              |
| Type                   | Dual Tuned Port Acoustic Bass Resonator                                 | Acoustic Air-Suspension   |
| Mounted Drivers        |   |   |
| Low Frequency Driver   | 6-1/2" Cone Type x 2  | —   |
| Mid-Frequency Driver   | —   | 4-1/2" Polypropylene Cone Type  |
| High Frequency Driver  | —   | 1" Dome Type  |
| Enclosure              | Floor Standing Type   | Acoustic Air-Suspension Floor Standing Type                             |
| Maximum Input Power    | 140Wch as Complete System   | 140Wch as Complete System   |
| Sensitivity            | 89dB/W/m  | 89dB/W/m  |
| Rated Input Power      | 70Wch as Complete System  | 70Wch as Complete System  |
| Frequency Response     | 30Hz—20kHz as Complete System   | 30Hz—20kHz as Complete System   |
| Impedance              | 8 ohms  | 8 ohms  |
| Dimensions (W x H x D) | 16-1/8" x 8-1/4" x 15-3/16"   | 8-3/8" x 12-13/16" x 6-1/4"   |
| Weight (Net)           | 22 lbs  | 6.6 lbs   |
| Enclosure Finish       | High Density Particle Board Laminated with Simulated Wood Grain Finish. | High Density Particle Board Laminated with Simulated Wood Grain Finish. |

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NEW JERSEY OFFICE

550 Clark Drive, Mt. Olive, New Jersey 07828, U.S.A.

# LOUDSPEAKERS

| MANUFACTURER         | Model             | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer: W Midrange: M Tweeter: T Super Tweeter: ST | Anechoic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish                  | Grille Color and Material | Weight, Lbs. | Price, \$    |
|----------------------|-------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|---|--|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------------------|---------------------------|--------------|--------------|
| BONDWELL (Continued) | M-100             | Dual Ported                                | 4 1/2                   |                           | Cone          | 1 1/2                    | Cone         |   | 70-16 $\pm$ 3                                    | 90                      |                                   | 4/                        | 9 x 6 x 7                        | Gray Foam                            | Opt., Black             | 7 Pair                    | 69.95 Pair   |              |
| BOSE                 | 901 VI            | Ac. Matrix                                 | (9)4 1/2                |                           |               |                          |              |   |  | 10                      | 8/                                | 21 x 13 x 13              | Wal.                             | Brown Knit                           | 17 1/2                  | 1499.00 Pair w/EQ         |              |              |
|                      | 601 III           | Ported                                     | (2)8                    |                           | (4)3          | Cones                    |              |   | 87   | 10                      | 1.5k, 2.5k                        | 8/                        | 12 x 12 x 30                     | Wal.                                 | Brown Knit              | 45                        | 999.00 Pair  |              |
|                      | 501 IV            | Ported                                     | 10                      |                           | (2)3          | Cones                    |              |   | 20   | 1.5k, 2.5k              | 8/                                | 16 x 14 x 25              | Teak Vinyl Opt.                  | Brown Knit Opt.,                     | 20                      | 699.00 Pair               |              |              |
|                      | 401               | Ported                                     | (2)6 1/2                |                           | 2             | Cone                     |              |   | 10   | 2.2k                    | 4/                                | 12 x 12 x 30              | Wal. Vinyl Rswd.                 | Brown Knit Opt.,                     | 31                      | 599.00 Pair               |              |              |
|                      | 301 II            | Ported                                     | 8                       |                           | (2)3          | Cones                    |              |   | 10   | 1.5k, 2.5k              | 8/                                | 10 x 17 x 10              | Wal. Vinyl Rswd.                 | Brown Knit Opt.,                     | 19                      | 399.00 Pair               |              |              |
|                      | 201 II            | Ported                                     | 6                       |                           | 3             | Cone                     |              |   | 5  | 1.5k, 2.5k              | 8/                                | 15 x 18 x 19              | Wal. Vinyl Rswd.                 | Brown Knit Opt.,                     | 10                      | 269.00 Pair               |              |              |
|                      | 101 Music Monitor | Ported                                     | 4 1/2                   |                           |               |                          |              |   | 89   | 10                      |                                   | 4/                        | 6 x 9 x 5                        | Opt.                                 | Opt.                    | 10                        | 219.00 Pair  |              |
|                      | RoomMate II       | Powered                                    | 4 1/2                   |                           |               |                          |              |   | 102  | Inc.                    |                                   |                           | 7 x 10 x 7                       | Black Metal                          | Black Metal             | 10 1/2                    | 339.00 Pair  |              |
|                      | Video RoomMate    | Powered                                    | 4 1/2                   |                           |               |                          |              |   | 100  | Inc.                    |                                   |                           | 6 x 9 x 5                        | Gray                                 | Black Metal             | 12                        | 339.00 Pair  |              |
|                      | Acoustimass 5     | Acousti-mass                               | (2)6 1/2                | (4)2 1/2                  | Cones         |                          |              |   | 89   | 10                      |                                   | 8/                        | Three Pieces                     | Opt.                                 | Opt.                    | 33                        | 799.00 Sys.  |              |
|                      | Acoustimass SE-5  | Acousti-mass                               | (2)6 1/2                | (4)2 1/2                  | Cones         |                          |              |   | 89   | 10                      |                                   | 6/                        | Three Pieces                     | Black                                | Black                   | 33                        | 799.00 Sys.  |              |
|                      | Acoustimass 3     | Acousti-mass                               | 5 1/4                   | 2 1/2                     | Cone          | 2 1/2                    | Cone         |   | 88   | 10                      |                                   | 6/                        | Three Pieces                     | Black                                | Black                   | 15                        | 599.00 Sys.  |              |
|                      | Freestyle         | Ported                                     | 4 1/2                   |                           |               |                          |              |   | 89   | 10                      |                                   | 6/                        | 10 x 6 x 5                       | Opt.                                 | Opt., Cloth             |                           | 399.00 Pair  |              |
|                      | 10.2 II           | Acousti-mass                               | 8                       |                           | (2)2          |                          |              |   | 88   | 10                      | 140, 1.6k                         | 8/                        | 39 x 12 x 12                     | Teak Ven. Teak Ven.                  | Brown Knit              | 46                        | 1299.00 Pair |              |
|                      | 6.2               | Ported                                     | 8                       |                           | (2)3          | Cones                    |              |   | 10   |                         | 1k-3.2k, 6k                       | 4/                        | 20 x 10 x 10                     | Teak Ven. Teak Ven.                  | Brown Knit              | 19 1/2                    | 599.00 Pair  |              |
| 4.2                  | Ported            | 8  |                         | 2 1/2                     | Cone          |                          |              | 10  |  |                         | 8/                                | 8 x 10 x 9                | Teak Vinyl                       | Brown Knit                           | 15                      | 399.00 Pair               |              |              |
| 2.2                  | Ported            | 6  |                         | 2                         | Cone          |                          |              | 10  |  |                         | 8/                                | 10 x 15 x 8               | Teak Vinyl                       | Brown Knit                           | 12                      | 269.00 Pair               |              |              |
| BOSTON ACOUSTICS     | SubSat Six        | Sat. & Subwoof.                            |                         | 4                         | Cone          | 3/4                      | Cone         |   | 46-20 $\pm$ 3                                    | 87                      | 15                                | 8/6                       | Three Pieces                     | Black Ash Vinyl Opt.                 | Black Perf. Steel       | 30 Sys.                   | 599.95 Sys.  |              |
|                      | T1000 Series II   | Ac. Sus.                                   | (2)8                    | 6 1/2                     | Cone          | 1                        | Dome         |   | 40-20 $\pm$ 3                                    | 90                      | 15                                | 250, 2.5k                 | 4/4                              | 43 x 10 x 12                         | Opt.                    |                           | 65           | 1200.00 Pair |
|                      | T930              | Ac. Sus.                                   | 10                      | 6 1/2                     | Cone          | 1                        | Dome         |   | 42-20 $\pm$ 3                                    | 90                      | 15                                | 350, 2.5k                 | 8/6                              | 37 x 11 x 12                         | Opt.                    |                           | 50           | 800.00 Pair  |
|                      | T830              | Ac. Sus.                                   | 8                       | 3 1/2                     | Cone          | 1                        | Dome         |   | 45-20 $\pm$ 3                                    | 88                      | 15                                | 800, 4k                   | 8/6                              | 33 x 10 x 10                         | Opt., Vinyl Opt.,       |                           | 40           | 500.00 Pair  |
|                      | A120              | Pas. Rad.                                  | 10                      | 6                         | Cone          | 1                        | Dome         |   | 39-20 $\pm$ 3                                    | 90                      | 15                                | 2.5k                      | 8/6                              | 25 x 9 x 13                          | Opt., Vinyl Opt.,       |                           | 25           | 420.00 Pair  |
|                      | A70 Series II     | Ac. Sus.                                   | 8                       |                           |               | 1                        | Dome         |   | 45-20 $\pm$ 3                                    | 90                      | 15                                | 2.5k                      | 8/5                              | 23 x 13 x 9                          | Opt., Vinyl Opt.,       |                           | 24           | 320.00 Pair  |
|                      | A60 Series II     | Ac. Sus.                                   | 8                       |                           |               | 1                        | Dome         |   | 52-20 $\pm$ 3                                    | 90                      | 10                                | 3k                        | 8/6                              | 18 x 11 x 8                          | Opt., Vinyl Opt.,       |                           | 16           | 240.00 Pair  |
|                      | A40 Series II     | Ac. Sus.                                   | 6 1/2                   |                           | 3/4           | Cone                     |              |   | 89   | 5                       | 3.5k                              | 8/5                       | 14 x 8 x 7                       | Opt., Vinyl Opt.,                    |                         | 9                         | 180.00 Pair  |              |
|                      | A40V Series II    | Ac. Sus.                                   | 6 1/2                   |                           | 3/4           | Cone                     |              |   | 90   | 5                       | 3.5k                              | 8/5                       | 14 x 8 x 7                       | Opt., Vinyl Opt.,                    | Black                   | 9                         | 190.00 Pair  |              |
|                      | 360               | In-Wall                                    | 6 1/2                   |                           | 1             | Dome                     |              |   | 89   | 5                       | 3k                                | 8/6                       | 12 x 9 x 3                       | Black Matte Black Opt.               | Opt., Perf. Steel Opt., | 4                         | 450.00 Pair  |              |
|                      | 350               | In-Wall                                    | 5 1/4                   |                           | 1             | Dome                     |              |   | 68-20 $\pm$ 2                                    | 90                      | 5                                 | 3.5k                      | 4/4                              | 10 x 7 x 3                           | Opt.                    | Opt., Perf. Steel Opt.,   | 3            | 400.00 Pair  |
|                      | 325               | In-Wall                                    | 5 1/4                   |                           | 3/4           | Cone                     |              |   | 70-20 $\pm$ 3                                    | 87                      | 5                                 |                           | 4/4                              | 6 x 6 x 2                            | Matte White             | Perf. Steel               | 2            | 250.00 Pair  |
|                      | 305               | In-Wall                                    | 5 1/4                   |                           |               | Cone                     |              |   | 70-16 $\pm$ 3                                    | 87                      | 5                                 |                           | 4/4                              | 6 x 6 x 2                            | Matte White             | Perf. Steel               | 2            | 175.00 Pair  |
|                      | SW10              | Powered Subwoof.                           | 10                      |                           |               |                          |              |   | 34-95 $\pm$ 3                                    |                         | Inc.                              |                           | 20 x 11 x 16                     | Black Ash Vinyl Matte Black Vinyl    | Black                   | 49                        | 599.95       |              |
|                      | PowerVent 12      | Subwoof.                                   |                         |                           |               |                          |              |   | 46-150 $\pm$ 3                                   | 87                      | 15                                | 8/6                       | 14 x 16 x 7                      |                                      |                         | 19                        | 350.00       |              |
| BRITISH FIDELITY     | MC2               | Bass Ref.                                  | 8                       |                           |               |                          | Dome         |   | 65-17 $\pm$ 2.5                                  | 87                      | 20                                | 8/                        | 10 x 19 x 11                     | Black                                | Cloth                   | 20                        |              |              |
|                      | REF 4             | Inf. Baf.                                  | 8                       |                           |               |                          | Dome         |   | 85-16 $\pm$ 2.5                                  | 90                      | 20                                | 8/                        | 10 x 15 x 9                      | Black                                | Cloth                   | 14                        |              |              |
|                      | REF 2             | Inf. Baf.                                  | 8                       |                           |               |                          | Dome         |   | 85-16  | 90                      | 20                                | 8/                        | 10 x 15 x 9                      | Black                                | Cloth                   | 11                        |              |              |
| BSM                  | Series 1          | Ac. Sus.                                   | 8                       |                           | 2             | Cone                     |              |   | 50-20 $\pm$ 2                                    | 90                      | 15                                | 2k                        | 8/4                              | 24 x 11 x 8                          | Black Vinyl             | Black Knit                | 14           | 149.00 Pair  |
|                      | Series 3 MK V     | Ac. Sus.                                   | 8                       | 3                         | Cone          | 2                        | Cone         |   | 48-20 $\pm$ 2                                    | 92                      | 15                                | 2k, 6k                    | 8/4                              | 24 x 11 x 9                          | Black Vinyl             | Black Knit                | 15           | 199.00 Pair  |
|                      | Series 4 MK V     | Ac. Sus.                                   | 10                      | 3                         | Cone          | 2                        | Cone         |   | 40-20 $\pm$ 2                                    | 93                      | 15                                | 2k, 6k                    | 8/4                              | 24 x 14 x 11                         | Black Vinyl             | Black Knit                | 18           | 249.00 Pair  |
|                      | Series 7 MK V     | Ac. Sus.                                   | 12                      | 4                         | Cone          | 2                        | Cone         |   | 30-20 $\pm$ 2                                    | 94                      | 15                                | 2k, 6k                    | 8/4                              | 27 x 15 x 13                         | Black Vinyl             | Black Knit                | 27           | 299.00 Pair  |
|                      | Series 12 MKII    | Pas. Rad.                                  | 12                      | 4                         | Cone          | 2                        | Cone         |   | 30-20 $\pm$ 2                                    | 94                      | 15                                | 2k, 6k                    | 8/4                              | 41 x 15 x 13                         | Black Vinyl             | Black Knit                | 39           | 399.00 Pair  |



# LOUDSPEAKERS

| MANUFACTURER         | Model               | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Sense Level Control, Woofer = W, Midrange = M, Tweeter = T, Super Tweeter = ST | Anchoic Frequency Response, Hz to kHz, ±dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms Nominal/Minimum | Dimensions, Inches (16 Nearest Inch) | Finish          | Grille Color and Material | Weight, Lbs. | Price, \$    |
|----------------------|---------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|--|--|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|-----------------|---------------------------|--------------|--------------|
| B & W                | DM550               | Inf. Baf.                                  | 6                       |                           |               | 1                        | Dome         |  | 70-20<br>±2.5                              | 87                      | 30                                | 3k                        | 8/4                             | 14 x 9 x 10                          | Opt., Wood      | Black Knit                | 12           | 400.00 Pair  |
|                      | DM560               | Vented                                     | 8                       |                           |               | 1                        | Dome         |  | 65-20<br>±2.5                              | 90                      | 30                                | 3k                        | 8/4                             | 19 x 9 x 12                          | Opt., Wood      | Black Knit                | 18¾          | 550.00 Pair  |
|                      | DM570               | Vented                                     | 8                       |                           |               | 1                        | Dome         |  | 55-20<br>±2.5                              | 91                      | 30                                | 3k                        | 8/4                             | 25 x 9 x 12                          | Opt., Wood      | Black Knit                | 23¾          | 650.00 Pair  |
|                      | DM580               | Vented                                     | (2)8                    |                           |               | 1                        | Dome         |  | 50-20<br>±2.5                              | 91                      | 30                                | 3k                        | 8/4                             | 35 x 9 x 16                          | Opt., Wood      | Black Knit                | 40¾          | 900.00 Pair  |
|                      | Matrix 1            | Inf. Baf.                                  | 6                       |                           |               | 1                        | Dome         |  | 80-25<br>±2                                | 86                      | 50                                | 3k                        | 8/4                             | 16 x 9 x 13                          | Opt.            | Black Knit                | 22           | 1200.00 Pair |
|                      | Matrix 2            | Vented                                     | 8                       |                           |               | 1                        | Dome         |  | 60-25<br>±2                                | 88                      | 50                                | 3k                        | 8/4                             | 24 x 10 x 13                         | Opt.            | Black Knit                | 35¼          | 1600.00 Pair |
|                      | Matrix 3            | Inf. Baf.                                  | (2)8                    |                           |               | 1                        | Dome         |  | 51-25<br>±2                                | 90                      | 50                                | 3k                        | 8/4                             | 36 x 10 x 16                         | Opt.            | Black Knit                | 64           | 2500.00 Pair |
|                      | CM1                 | Inf. Baf.                                  | 4½                      |                           |               | 1                        | Dome         |  | 90-20<br>±1.5                              | 85                      | 50                                | 3k                        | 8/4                             | 10 x 6 x 9                           | Opt.            | Black Mesh                | 11           | 750.00 Pair  |
|                      | Matrix Mini         | Vented                                     | (2)4½                   | 4½                        | Cone          | 1                        | Dome         |  | 48-20<br>±1.5                              | 87                      | 50                                | 150,3k                    | 8/4                             | 39 x 6 x 9                           | Opt.            | Black Mesh                | 35           | 1750.00 Pair |
|                      | CM2                 |  |                         |                           |               |                          |              |  |  |                         |                                   |                           |                                 |                                      |                 |                           |              |              |
|                      | Matrix Mini Tower   | Vented                                     | 12                      | 4½                        | Cone          | 1                        | Dome         |  | 20-20<br>±2                                | 88                      | 100                               | 400,3.5k                  | 8/4                             | 40 x 17 x 22                         | Opt., Wood      | Black Knit                | 110          | 5000.00 Pair |
|                      | 801 Matrix Series 2 | Vented                                     | (2)8                    | 4½                        | Cone          | 1                        | Dome         |  | 27-20<br>±2                                | 90                      | 50                                | 400,3k                    | 8/4                             | 41 x 12 x 15                         | Opt., Wood      | Black Knit                | 70           | 3600.00 Pair |
|                      | 802 Matrix Series 2 | Ac. Sus.                                   | 6                       |                           |               | 1                        | Dome         |  | 45-20<br>±3                                | 89                      | 10                                | 3k                        | 6/                              | 12 x 8 x 3                           | Opt., Wood      | White                     |              |              |
|                      | CWM6                | Ac. Sus.                                   | 8                       |                           |               | 1                        | Dome         |  | 35-20<br>±3                                | 90                      | 10                                | 3k                        | 4/                              | 13 x 10 x 3                          | White           | Opl.                      |              |              |
|                      | CWM8                | Ac. Sus.                                   | (2)6                    |                           |               |                          |              | W  | 22-100<br>±3                               | Adj.                    | 30                                |                           | 9/                              | 22 x 14 x 10                         | Black Ash       |                           | 28           | 350.00       |
| CADAWAS ACOUSTICS    | TC-1                | Auto Damping                               | 8,10                    | 5¼                        | Cone          | 1,2                      | Dome, Cone   | M,T  |  | 87                      | 25                                | 250,3.5k, 8k              | 8/6.5                           | 24 x 15 x 11                         | Oiled Wal.      | Brown Cloth               | 44           | 1195.00 Pair |
|                      | Mobile Monitor One  | Auto Damping                               | (2)5¼                   |                           |               | 1                        | Dome         | T  |  | 87                      | 15                                | 2.5k                      | 8/                              | 14 x 8 x 8                           | Oiled Wal.      | Brown Cloth               | 15           | 595.00 Pair  |
|                      | TC-2                | Auto Damping Subwoof.                      | 8,10                    |                           |               |                          |              | W  | 20-125                                     | 87                      | 25                                | 125                       | 8/                              | 24 x 15 x 11                         | Oiled Wal.      | Brown Cloth               | 40           | 650.00 Pair  |
| CAMBER               | .7t                 | Bass Ref.                                  | 6                       |                           |               | ½                        | Dome         |  | 65-20<br>±3                                | 89                      | 15                                | 3.5k                      | 8/7                             | 14 x 8 x 9                           | Opt., Wood      | Black Knit                | 15           | 249.00 Pair  |
|                      | 1.0ti               | Bass Ref.                                  | 6                       |                           |               | ¾                        | Dome         |  | 60-20<br>±3                                | 89                      | 20                                | 2.7k                      | 8/7                             | 15 x 8 x 11                          | Opt., Wood      | Black Knit                | 18           | 329.00 Pair  |
|                      | 2.0ti               | Bass Ref.                                  | 7                       |                           |               | ¾                        | Dome         |  | 55-20<br>±3                                | 90                      | 25                                | 2.7k                      | 8/6                             | 16 x 9 x 11                          | Opt., Wood      | Black Knit                | 21           | 399.00 Pair  |
|                      | 3.0ti               | Bass Ref.                                  | 8                       |                           |               | ¾                        | Dome         |  | 50-20<br>±3                                | 90                      | 30                                | 2.7k                      | 8/6                             | 18 x 10 x 11                         | Opt., Wood      | Black Knit                | 28           | 499.00 Pair  |
|                      | 3.5ti               | Bass Ref.                                  | 8                       |                           |               | 1                        | Dome         |  | 45-22<br>±2                                | 90                      | 35                                | 2.5k                      | 8/6                             | 24 x 10 x 11                         | Opt., Wood      | Black Knit                | 35           | 699.00 Pair  |
|                      | 5.0ti               | Pas. Rad.                                  | (2)8                    |                           |               | 1                        | Dome         |  | 40-22<br>±2                                | 90                      | 50                                | 2.5k                      | 8/6                             | 35 x 10 x 11                         | Opt., Wood      | Black Knit                | 55           | 899.00 Pair  |
|                      | 5.5ti               | Bass Ref.                                  | (2)8                    | 7                         | Cone          | 1                        | Dome         |  | 35-22<br>±2                                | 91                      | 50                                | 200,2.5k                  | 8/6                             | 42 x 10 x 15                         | Opt., Oak       | Black Knit                | 100          | 1500.00 Pair |
| CAMBRIDGE PHYSICS    | G-7 II              | Vented                                     | 6½                      |                           |               | ¾                        | Dome         |  |  | 90                      | 8                                 | 2.2k                      | 8/5                             | 16 x 12 x 5                          | Oak Vinyl       | Brown Knit                | 12           | 265.00 Pair  |
|                      | G-11 II             | Ac. Sus.                                   | 8                       |                           |               | 1                        | Dome         |  |  | 90                      | 15                                | 1.5k                      | 5/4                             | 19 x 12 x 8                          | Oak Vinyl       | Brown Knit                | 18           | 400.00 Pair  |
|                      | G-33 II             | Pas. Rad.                                  | 8                       |                           |               | 1                        | Dome         |  |  | 91                      | 15                                | 1.5k                      | 5/4                             | 29 x 18 x 8                          | Oak Vinyl       | Brown Knit                | 28           | 350.00 Pair  |
|                      | G-66 II             | Vented                                     | (2)8                    | 3                         | Dome          | ¾                        | Dome         |  |  | 93                      | 30                                | 400,4k                    | 4/3                             | 44 x 18 x 12                         | Oak             | Brown Knit                | 81           | 1000.00 Pair |
| CAMBRIDGE SOUNDWORKS | Ensemble            | Ac. Sus. Sat. & Subwoof.                   | (2)8,4                  |                           |               | ¾,1¾                     | Dome, Cone   | No   |  | 85                      | 25                                | 140,1.9k                  | 6/                              | Four Pieces                          | Nxtl.           | Black Metal               | 52 Sys.      | 499.00 Sys.  |
|                      | Ambiance            | Ac. Sus.                                   | 6½                      |                           |               | 1                        | Dome         | No   |  | 83                      | 15                                | 1.8k                      | 8/                              | 7 x 11 x 5                           | Opt.            | Black Metal               | 10           | 218.00 Pair  |
| CANTON               | InWall 9            | In-Wall Inf. Baf.                          | 9                       |                           |               | 1                        | Dome         |  | 30-30                                      |                         |                                   | 2.5k                      | 4/                              | 10 x 10 x 3                          |                 | White Metal               | 3¾           | 600.00 Pair  |
|                      | Fonum 300           | Vented                                     | 8                       |                           |               | 1                        | Dome         |  | 38-26                                      |                         |                                   | 2.5k                      | 8/                              | 9 x 14 x 8                           | Black Ash Vinyl | Black Metal               | 14           | 495.00 Pair  |
|                      | Fonum 400           | Vented                                     | 9                       | 1½                        | Dome          | ¾                        | Dome         |  | 35-26                                      |                         |                                   | 900,5k                    | 8/                              | 10 x 18 x 10                         | Black Ash Vinyl | Black Metal               | 20½          | 749.00 Pair  |
|                      | Fonum 600           | Vented                                     | 9                       | 1½                        | Dome          | ¾                        | Dome         |  | 30-26                                      |                         |                                   | 900,5k                    | 4/                              | 10 x 32 x 11                         | Black Ash Vinyl | Black Metal               | 37           | 995.00 Pair  |
|                      | Plus S              | Ac. Sus.                                   | 4¾                      |                           |               | 1                        | Dome         |  | 45-30                                      | 87.2                    |                                   | 2.2k                      | 4/                              | 8 x 5 x 4                            | Opt., Mesh      | Opt., Mesh                | 11 Pair      | 340.00 Pair  |
|                      | GL 260              | Ac. Sus.                                   | 6¾                      |                           |               | 1                        | Dome         |  | 42-30                                      | 87.3                    |                                   | 1.7k                      | 4/                              | 10 x 7 x 5                           | Opt.            | Opt., Mesh                | 15 Pair      | 490.00 Pair  |
|                      | GL 300F             | Ac. Sus.                                   | 6¾                      |                           |               | 1                        | Dome         |  | 48-30                                      | 87.3                    |                                   | 1.7k                      | 4/                              | 13 x 9 x 3                           | Opt.            | Opt., Mesh                | 18 Pair      | 500.00 Pair  |
|                      | Plus C              | Ac. Sus.                                   | 12                      |                           |               |                          |              |  | 20-120                                     | 89.7                    |                                   | 120                       | 4/                              | 14 x 14 x 13                         | Opt.            | Opt., Mesh                | 30 Pair      | 575.00 Pair  |
|                      | Plus Beta           | Subwoof. Powered Ac. Sus. Subwoof.         | 12                      |                           |               |                          |              |  | 20-140                                     |                         | Inc.                              | 70,90,140                 |                                 | 15 x 15 x 14                         | Opt.            | Opt., Mesh                | 47           | 2000.00      |
|                      | Karat 20            | Vented                                     | 7¾                      |                           |               | 1                        | Dome         |  | 36-30                                      | 91.9                    |                                   | 2.5k                      | 4/                              | 13 x 9 x 8                           | Opt.            | Opt.                      | 14           | 690.00 Pair  |
|                      | (Continued)         |  |                         |                           |               |                          |              |  |  |                         |                                   |                           |                                 |                                      |                 |                           |              |              |



Can you think of any rock and roll song that actually sounds better at a low volume?

(Well, okay, maybe *Sugar, Sugar* by the Archies).

Simply, for most of us, great rock and roll is best when it's played loud. And clear.

Which is precisely where we come in. At Cerwin-Vega, we build loudspeakers so you, and your neighbors, can hear everything from booming bass to guitars gently weeping.



*There are 6 models in our high-tech SE Series (above). Cerwin-Vega AT-Series loudspeakers (left) are available in 4 models.*

In fact, our three series of loudspeakers (the AT, SE, and D-Series) can reproduce bass all the way down to a throbbing 30 Hertz. And all the way up to 28,000 Hertz.

What's more, every Cerwin-Vega speaker can run on as little as 5 watts. On the other hand, our 15" models can handle up to 400 watts of continuous power.

And reach a volume level of 127 very loud decibels.

Of course, in this magazine, every speaker sounds exactly the same. Silent.

So we suggest you take your favorite discs to your favorite store and ask to listen to Cerwin-Vega speakers.

Tell them you'd just like to hear the sound of a little live ammunition.



*Cerwin-Vega D-Series loudspeakers are available in 5 models. From the 8 1/2-way D-1 to the 15 1/3-way D-9.*

**Cerwin-Vega!**

For more information please write or call Cerwin-Vega:  
555 East Easy St., Simi Valley, CA 93065 805-584-9332  
Cerwin-Vega Canada: 2360 Midland Ave., Scarborough,  
Ontario M1S4A9 Cerwin-Vega Europe: Grynderupvej 12,  
P.O. Box 40, DK-9610 Norager, Denmark

# If rock and roll is rebellion, this is live ammunition.

Enter No. 33 on Reader Service Card

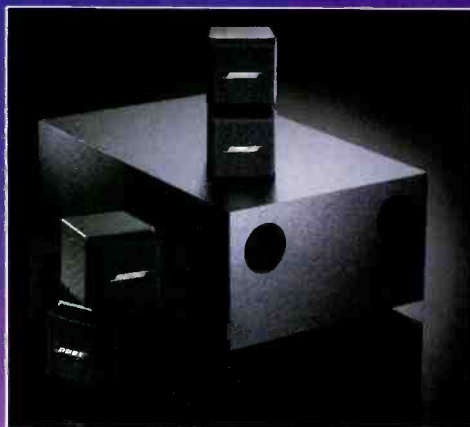


# "Superb sound and virtual invisibility."

—Stereo Review, Julian Hirsch



Acoustimass® array with optional mounting accessory for unobtrusive placement.



The Bose® Acoustimass speaker system.



Both arrays are equipped with magnetic shielding for high-fidelity video listening.



The system's heart—the Acoustimass® module—can be completely hidden, providing *virtual invisibility*.



Enter No. 27 on Reader Service Card

# Presenting the Bose® Acoustimass® Direct/Reflecting® Speaker System

"In our listening room, side by side with speakers costing three to five times as much, the AM-5 consistently produced the more exciting and listenable sound in A/B tests.

—Stereophile, Julian Hirsch

"... a sonic standout."

—The New York Times, Hans Fantel

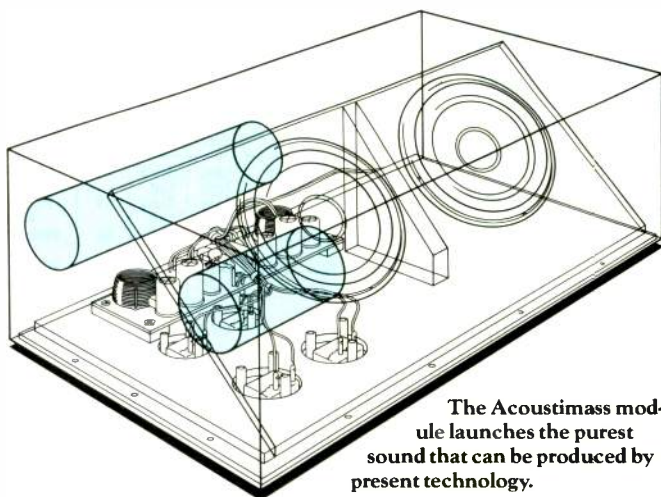
To hear the sound they're talking about, look for an Acoustimass® speaker system

Take the room-filling, full fidelity sound you expect from full-sized speakers, and imagine it coming from two tiny arrays, each no larger than a quart carton of milk.

This is the Acoustimass speaker listening experience.

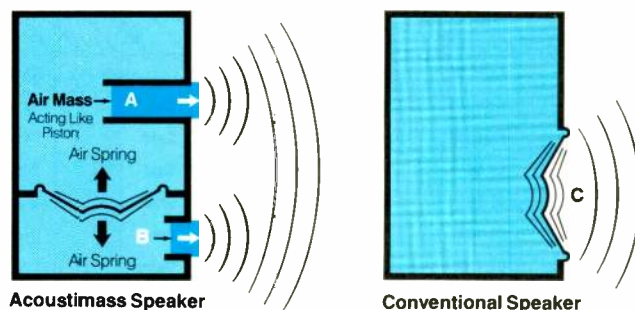
"Superb sound . . .

An Acoustimass speaker launches sound into the room by two air masses, producing the purest sound possible from any present-technology speaker design—regardless of size or price. Its purer sound, wider dynamic range and greater output mean that any sound source—music or video—will sound more lifelike, with much of its original realism and impact reproduced right in the listening room.



The Acoustimass module launches the purest sound that can be produced by present technology.

How an Acoustimass® speaker works.



Acoustimass Speaker

Conventional Speaker

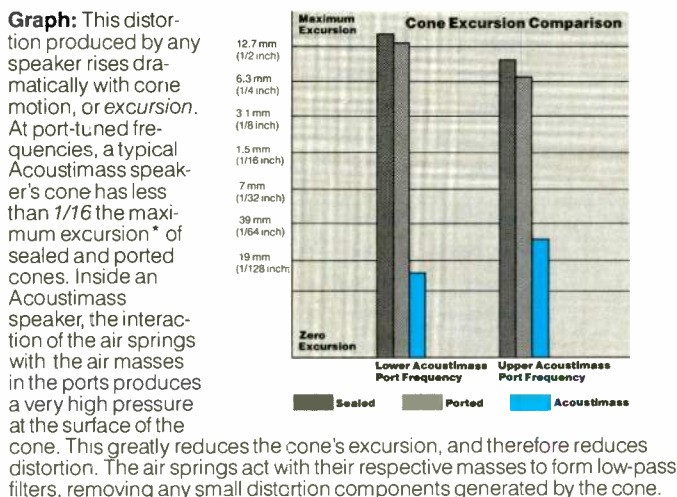
Improving speaker performance means first reducing distortion. The design of an Acoustimass® speaker substantially reduces distortion (see diagrams and graph). The benefits of this patented speaker technology are: purer sound and virtual invisibility, along with higher power handling and wider dynamic range.

**Left:** An Acoustimass speaker launches sound into the room using two masses of air working like pistons (A & B, darker blue), rather than by a surface vibrating directly into the room. The sound launched into the room by the Acoustimass speaker's air pistons is the purest sound that can be produced by present technology.

**Right:** A vibrating cone radiating directly into the room (C) produces unfiltered sound.

## Cone Excursion Comparison

(lower excursion means lower distortion)



\*based on cone travel measurements at 128 watts input.

## A difference you can see and hear.

There are a number of three-piece speakers available. But only Acoustimass speaker technology delivers the full benefits of "superb sound and virtual invisibility." Ask your Bose dealer to give you an A/B demonstration comparing the Acoustimass system to any other speaker on display—and judge for yourself. For more information call toll-free 1-800-444-2673.

# BOSE®

Better sound through research.

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# LOUDSPEAKERS

| MANUFACTURER          | Model                                | Design Principle, Enclosure or System Type |                                    |                                   |            |                          |             |              |       |   |      |  |                 |                         |              |                                   |             |                                  |             |                                      |             |                  |         |                           |      |              |  |           |  |
|-----------------------|--------------------------------------|--|------------------------------------|-----------------------------------|------------|--------------------------|-------------|--------------|-------|---|------|--|-----------------|-------------------------|--------------|-----------------------------------|-------------|----------------------------------|-------------|--------------------------------------|-------------|------------------|---------|---------------------------|------|--------------|--|-----------|--|
|                       |                                      | Woofer Diameter, Inches                    |                                    | Midrange Diameter, Inches         |            | Tweeter Diameter, Inches |             | Tweeter Type |       | Separate Level Controls? Woofer: W, Midrange: M, Tweeter: T, Supertweeter: ST |      | Anechoic Frequency Response, Hz to kHz, $\pm$ dB |                 | SPL, 1 Watt/1 Meter, dB |              | Recommended Min. Amp Power, Watts |             | Impedance, Ohms: Nominal/Minimum |             | Dimensions, Inches (To Nearest Inch) |             | Finish           |         | Grille Color and Material |      | Weight, Lbs. |  | Price, \$ |  |
| CANTON<br>(Continued) | Karat 30                             | Vented                                     | 8 $\frac{5}{8}$                    |                                   |            | 1                        | Dome        |              |       | 30-30   | 92.2 |  | 2.5k            | 4/                      | 17 x 11 x 11 | Opt.                              | Opt.        | 26                               |             | Opt.                                 | Opt.        | 26               |         | 890.00                    | Pair |              |  |           |  |
|                       | Karat 40                             | Vented                                     | 8 $\frac{5}{8}$                    | 4 $\frac{3}{4}$                   | Cone       | 1                        | Dome        |              |       | 24-30   | 92.6 |  | 450,4k          | 4/                      | 20 x 11 x 11 | Opt.                              | Opt.        | 32                               |             | Opt.                                 | Opt.        | 32               |         | 1290.00                   | Pair |              |  |           |  |
|                       | Karat 60                             | Vented                                     | 10                                 | 4 $\frac{3}{4}$                   | Cone       | 1                        | Dome        |              |       | 22-30   | 93.9 |  | 450,4k          | 4/                      | 23 x 12 x 12 | Opt.                              | Opt.        | 44                               |             | Opt.                                 | Opt.        | 44               |         | 1590.00                   | Pair |              |  |           |  |
|                       | CT 80                                | Vented                                     | 8 $\frac{5}{8}$                    | 4 $\frac{3}{4}$                   | Cone       | 1                        | Dome        |              |       | 22-30   | 93.4 |  | 450,4k          | 4/                      | 32 x 11 x 12 | Opt.                              | Opt.        | 49                               |             | Opt.                                 | Opt.        | 49               |         | 1650.00                   | Pair |              |  |           |  |
|                       | CT 90                                | Vented                                     | 10                                 | 4 $\frac{3}{4}$                   | Cone       | 1                        | Dome        |              |       | 20-30   | 93.4 |  | 450,4k          | 4/                      | 35 x 12 x 13 | Opt.                              | Opt.        | 71                               |             | Opt.                                 | Opt.        | 71               |         | 2400.00                   | Pair |              |  |           |  |
|                       | CT 100                               | Vented                                     | 6 $\frac{3}{8}$ , 10 $\frac{1}{4}$ | 1 $\frac{1}{2}$                   | Dome       | 1                        | Dome        |              |       | 18-30   | 94.8 |  | 250, 1.1k, 4.6k | 4/                      | 41 x 13 x 14 | Opt.                              | Opt., Cloth | 88                               |             | Opt., Cloth                          | Opt., Cloth | 88               |         | 3500.00                   | Pair |              |  |           |  |
|                       | CT 120                               | Vented                                     | 7 $\frac{7}{8}$ , 12 $\frac{1}{4}$ | 1 $\frac{1}{2}$                   | Dome       | 1                        | Dome        |              |       | 18-30   | 95.2 |  | 250, 1.1k, 4.6k | 4/                      | 47 x 14 x 16 | Opt.                              | Opt., Cloth | 128                              |             | Opt., Cloth                          | Opt., Cloth | 128              |         | 5000.00                   | Pair |              |  |           |  |
|                       | CA 15                                | Powered                                    | 10 $\frac{1}{4}$                   | 4 $\frac{3}{4}$                   | Cone       | 1                        | Dome        | W, M, T      |       | 20-30   |      | Inc.   | 350, 3.5k       |                         | 35 x 12 x 13 | Opt.                              | Opt., Cloth |                                  |             | Opt., Cloth                          | Opt., Cloth |                  |         | 6500.00                   | Pair |              |  |           |  |
|                       | CA 20                                | Powered                                    | 10 $\frac{1}{4}$                   | 7 $\frac{1}{2}$ , 1 $\frac{1}{2}$ | Cone, Dome | 1                        | Dome        | W, M, T, ST  |       | 20-30   |      | Inc.   | 220, 1.6k, 4.5k |                         | 13 x 48 x 16 | Opt.                              | Opt., Cloth | 181                              |             | Opt., Cloth                          | Opt., Cloth | 181              |         | 11,000.                   | Pair |              |  |           |  |
| CA 30                 | Powered                              | 10 $\frac{1}{4}$                           | 7 $\frac{1}{2}$ , 1 $\frac{1}{2}$  | Cone, Dome                        | 1          | Dome                     | W, M, T, ST |              | 20-30 |   | Inc. | 220, 1.6k, 4.5k                                  |                 | 15 x 67 x 17            | Opt.         | Opt., Cloth                       | 280         |                                  | Opt., Cloth | Opt., Cloth                          | 280         |                  | 16,500. | Pair                      |      |              |  |           |  |
| CARVER                | Amazing Loudspeaker Platinum Edition | Ribbon                                     | (4)12                              |                                   |            | 60L                      | Ribbon      |              |       | 23-40 $\pm$ 3   | 89   | 60   | 120             | 8/8                     | 30 x 66 x 10 | Opt.                              | Black Knit  | 110                              |             | Black Knit                           | Black Knit  | 110              |         | 2195.00                   | Pair |              |  |           |  |
|                       | Amazing Loudspeaker Silver Edition   | Ribbon                                     | (3)12                              |                                   |            | 40L                      | Ribbon      |              |       | 23-40 $\pm$ 3   | 89   | 60   | 120             | 8/8                     | 22 x 54 x 10 | Opt.                              | Black Knit  | 75                               |             | Black Knit                           | Black Knit  | 75               |         | 1795.00                   | Pair |              |  |           |  |
| CASCADE               | SPS-215 AD                           | Vented                                     | 5 $\frac{1}{4}$                    |                                   |            | 1                        | Dome        | T            |       | 65-20 $\pm$ 4.5   | 87   | 25   | 1.4k            | 8/3                     | 12 x 8 x 7   | Oak                               | Black Knit  | 20                               |             | Black Knit                           | Black Knit  | 20               |         | 738.00                    | Pair |              |  |           |  |
|                       | SPS-319 AD                           | Vented                                     | 7                                  | 3                                 | Dome       | 1                        | Dome        | M, T         |       | 50-20 $\pm$ 4.5   | 88   | 30   | 640, 2.1k       | 8/3                     | 19 x 12 x 9  | Oak                               | Black Knit  | 39                               |             | Black Knit                           | Black Knit  | 39               |         | 1158.00                   | Pair |              |  |           |  |
|                       | SPS-317 Mk. II                       | Vented                                     | (2)6 $\frac{1}{2}$                 |                                   |            | 1                        | Dome        | T            |       | 42-20 $\pm$ 3   | 89   | 30   | 2.8k            | 4/2                     | 32 x 8 x 10  | Oak                               | Black Knit  | 47                               |             | Black Knit                           | Black Knit  | 47               |         | 1298.00                   | Pair |              |  |           |  |
|                       | SPS-422 Mk. I                        | Vented                                     | (2)8                               | 4                                 | Cone       | 1                        | Dome        | M, T         |       | 33-20 $\pm$ 3   | 91   | 30   | 450, 3.2k       | 4/2                     | 41 x 11 x 14 | Dak                               | Black Knit  | 73                               |             | Black Knit                           | Black Knit  | 73               |         | 1998.00                   | Pair |              |  |           |  |
| CASTLE ACOUSTICS      | Trent                                | Bass Ref.                                  | 5                                  |                                   |            | 1                        | Dome        | No           |       | 70-22   | 89   | 10   |                 | 8/6                     | 13 x 7 x 8   | Wood Ven.                         | Black Foam  | 17                               |             | Wood Ven.                            | Black Foam  | 17               |         | 279.00                    | Pair |              |  |           |  |
|                       | Clyde                                | Bass Ref.                                  | 5                                  |                                   |            | 1                        | Dome        | No           |       | 65-22   | 89   | 10   |                 | 6/6                     | 15 x 9 x 9   | Wood Ven.                         | Black Foam  | 22                               |             | Wood Ven.                            | Black Foam  | 22               |         | 350.00                    | Pair |              |  |           |  |
|                       | Warwick                              | Bass Ref.                                  | 6                                  |                                   |            | 1                        | Dome        | No           |       | 55-22   | 89   | 10   |                 | 8/6                     | 18 x 10 x 10 | Wood Ven.                         | Black Foam  | 34                               |             | Wood Ven.                            | Black Foam  | 34               |         | 495.00                    | Pair |              |  |           |  |
|                       | Durham                               | Bass Ref.                                  | 6                                  |                                   |            | 1                        | Dome        | No           |       | 60-22   | 89   | 15   |                 | 8/6                     | 16 x 9 x 9   | Wood Ven.                         | Black Foam  | 33                               |             | Wood Ven.                            | Black Foam  | 33               |         | 575.00                    | Pair |              |  |           |  |
|                       | Pembroke II                          | Bass Ref.                                  | 8                                  |                                   |            | 1                        | Dome        | No           |       | 48-22   | 89   | 15   |                 | 8/6                     | 22 x 10 x 12 | Wood Ven.                         | Black Foam  | 62                               |             | Wood Ven.                            | Black Foam  | 62               |         | 750.00                    | Pair |              |  |           |  |
|                       | Stirling                             | Bass Ref.                                  | (2)6                               |                                   |            | 1                        | Dome        | No           |       | 48-22   | 89   | 15   |                 | 8/6                     | 22 x 10 x 13 | Wood Ven.                         | Black Foam  | 66                               |             | Wood Ven.                            | Black Foam  | 66               |         | 1095.00                   | Pair |              |  |           |  |
| CDE                   | Mini Monitor IV                      | Inf. Baf.                                  | 5 $\frac{1}{2}$                    |                                   |            | 1                        | Dome        |              |       | 50-20   | 90   | 20   | 1.5k            | /4                      | 7 x 11 x 9   | Lacq. Teak                        | Black Knit  | 15                               |             | Lacq. Teak                           | Black Knit  | 15               |         | 650.00                    | Pair |              |  |           |  |
|                       | Mini Monitor V                       | Inf. Baf.                                  | 5 $\frac{1}{2}$                    |                                   |            | 1                        | Dome        |              |       | 50-32   | 86   | 20   | 1.5k            | /4                      | 15 x 6 x 9   | Lacq. Teak                        | Black Knit  | 15                               |             | Lacq. Teak                           | Black Knit  | 15               |         | 950.00                    | Pair |              |  |           |  |
|                       | Tower I                              | Pas. Rad.                                  | 8                                  | 7                                 | Cone       | 1                        | Dome        |              |       | 40-20   | 91   | 20   | 200, 1.5k       | /8                      | 8 x 37 x 12  | Lacq. Teak                        | Black Knit  | 47                               |             | Lacq. Teak                           | Black Knit  | 47               |         | 2500.00                   | Pair |              |  |           |  |
|                       | Mini Tower & Double Subwoofer        | Inf. Baf. Sat. & Ported Subwoofer          | 8                                  | 5 $\frac{1}{2}$                   | Cone       | 1                        | Dome        |              |       | 22-32   | 91   | 40   | 150, 1.5k       | 4/16                    | Four Pieces  | Lacq. Teak                        | Black Knit  | 100                              |             | Lacq. Teak                           | Black Knit  | 100              |         | 4800.00                   | Pair |              |  |           |  |
|                       | Reference                            | Inf. Baf. Sat. & Ported Subwoofer          | (2)10                              | (2)5 $\frac{1}{2}$                | Cones      | 1                        | Dome        |              |       | 20-32   | 90   | 50   | 100, 1.5k       |                         | Four Pieces  | Black Lacq.                       | Black Knit  | 500                              |             | Black Lacq.                          | Black Knit  | 500              |         | 35,000.                   | Sys. |              |  |           |  |
|                       | Colossus                             | Inf. Baf. Sat. & Ported Subwoofer          | (2)8, (6)10                        | 6 $\frac{1}{2}$                   | Cone       | 1                        | Dome        |              |       | 15-32   | 91   | 50   | 65,300, 1.5k    |                         | Four Pieces  | Black Lacq.                       | Black Knit  | 1100                             |             | Black Lacq.                          | Black Knit  | 1100             |         | 55,000.                   | Sys. |              |  |           |  |
| CELESTION             | 3000                                 | Ac. Sus.                                   | 8                                  |                                   |            | 21x $\frac{1}{2}$        | Ribbon      |              |       | 66-20 $\pm$ 3   | 86   | 40   | 900             | 8/4                     | 26 x 13 x 12 | Black Vinyl                       | Black       | 43                               |             | Black Vinyl                          | Black       | 43               |         |                           |      |              |  |           |  |
|                       | 5000                                 | Ac. Sus.                                   | 8                                  |                                   |            | 21x $\frac{1}{2}$        | Ribbon      |              |       | 66-20 $\pm$ 3   | 86   | 40   | 900             | 8/4                     | 26 x 13 x 12 | Wal. Ven.                         | Black       | 43                               |             | Wal. Ven.                            | Black       | 43               |         |                           |      |              |  |           |  |
|                       | 7000                                 | Ac. Sus.                                   | (2)8                               |                                   |            | 21x $\frac{1}{2}$        | Ribbon      |              |       | 45-20 $\pm$ 3   | 86   | 40   | 900             | 8/4                     | 47 x 13 x 14 | Wal. Ven.                         | Black       | 80                               |             | Wal. Ven.                            | Black       | 80               |         |                           |      |              |  |           |  |
|                       | SL 6Si                               | Ac. Sus.                                   | 6                                  |                                   |            | 1 $\frac{1}{4}$          | Dome        |              |       | 75-20 $\pm$ 3   | 84   | 35   | 2.8k            | 8/                      | 15 x 8 x 11  | Opt.                              | Black       | 18 $\frac{1}{2}$                 |             | Opt.                                 | Black       | 18 $\frac{1}{2}$ |         | 950.00                    | Pair |              |  |           |  |
|                       | SL 600                               | Ac. Sus.                                   | 6                                  |                                   |            | 1 $\frac{1}{4}$          | Dome        |              |       | 75-20 $\pm$ 3   | 82   | 35   | 2.3k            | 8/                      | 15 x 8 x 9   | Nxtl.                             | Opt.        | 11 $\frac{1}{4}$                 |             | Nxtl.                                | Opt.        | 11 $\frac{1}{4}$ |         | 2000.00                   | Pair |              |  |           |  |
|                       | SL 12Si                              | Ac. Sus.                                   | (2)6                               |                                   |            | 1 $\frac{1}{4}$          | Dome        |              |       | 70-20 $\pm$ 3   | 86   | 35   | 500, 2.8k       | 8/                      | 21 x 8 x 12  | Opt.                              | Black       | 29 $\frac{1}{4}$                 |             | Opt.                                 | Black       | 29 $\frac{1}{4}$ |         | 1500.00                   | Pair |              |  |           |  |
|                       | SL 700                               | Ac. Sus.                                   | 6                                  |                                   |            | 1 $\frac{1}{4}$          | Dome        |              |       | 63-20 $\pm$ 3   | 82   | 35   | 3k              | 8/                      | 8 x 10 x 14  | Nxtl.                             | Opt.        | 14                               |             | Nxtl.                                | Opt.        | 14               |         | 3000.00                   | Pair |              |  |           |  |
|                       | System 600                           | Double-Dipole Subwoofer                    | (2)12                              |                                   |            |                          |             |              |       | 20-100  |      | 35   | 100             | 8/                      | 18 x 15 x 21 | Nxtl.                             | Black       | 76                               |             | Nxtl.                                | Black       | 76               |         | 2700.00                   | Pair |              |  |           |  |
|                       | 3                                    | Ac. Sus.                                   | 5                                  |                                   |            | 1                        | Dome        |              |       | 75-20 $\pm$ 3   | 86   | 25   | 5k              | 8/                      | 12 x 7 x 9   | Opt., Vinyl                       | Black       | 8 $\frac{1}{2}$                  |             | Opt., Vinyl                          | Black       | 8 $\frac{1}{2}$  |         | 250.00                    | Pair |              |  |           |  |
|                       | DL 4                                 | Ac. Sus.                                   | 6 $\frac{1}{2}$                    |                                   |            | 1                        | Dome        |              |       | 70-20 $\pm$ 3   | 89   | 25   | 3k              | 8/                      | 15 x 8 x 9   | Opt., Vinyl                       | Black       | 10 $\frac{1}{2}$                 |             | Opt., Vinyl                          | Black       | 10 $\frac{1}{2}$ |         | 330.00                    | Pair |              |  |           |  |
|                       | DL 6                                 | Ac. Sus.                                   | 8                                  |                                   |            | 1                        | Dome        |              |       | 60-20 $\pm$ 3   | 89   | 25   | 3.5k            | 8/                      | 18 x 10 x 10 | Opt., Vinyl                       | Black       | 15 $\frac{1}{2}$                 |             | Opt., Vinyl                          | Black       | 15 $\frac{1}{2}$ |         | 440.00                    | Pair |              |  |           |  |
|                       | DL 8                                 | Ac. Sus.                                   | 8                                  |                                   |            | 1                        | Dome        |              |       | 50-20 $\pm$ 3   | 89   | 35   | 3.5k            | 8/                      | 20 x 11 x 10 | Opt., Vinyl                       | Black       | 22                               |             | Opt., Vinyl                          | Black       | 22               |         | 550.00                    | Pair |              |  |           |  |
| (Continued)           |                                      |  |                                    |                                   |            |                          |             |              |       |   |      |  |                 |                         |              |                                   |             |                                  |             |                                      |             |                  |         |                           |      |              |  |           |  |

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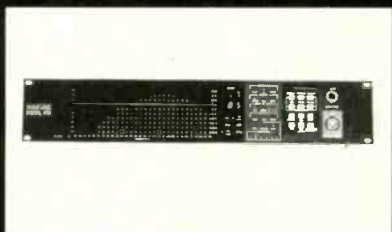
**Speaker Kits** Only Gold Sound has easy -to- build home, car & pro kits. Features include symmetrical arrays, polypropylene dual voice coil woofers, ribbon & titanium supertweeters. Assembled cabinets available. From \$79 to \$3498.

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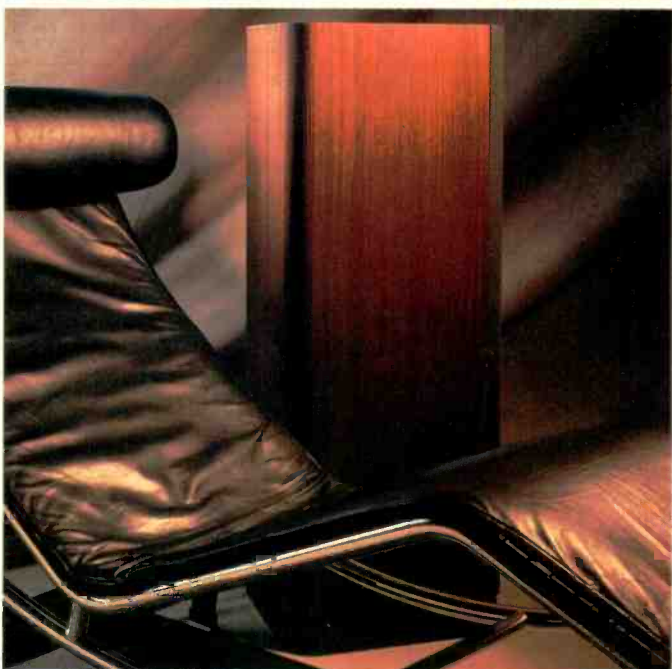
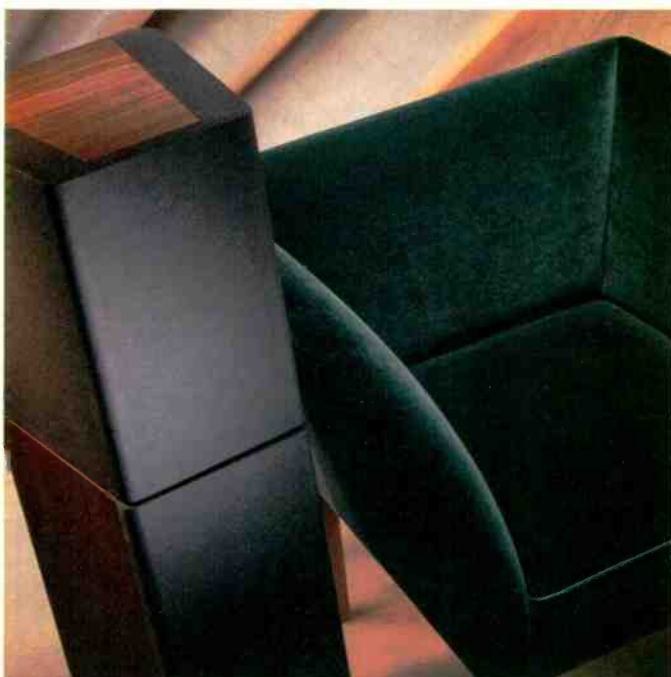
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# LOUDSPEAKERS

| MANUFACTURER                           | Model                         | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Low Control? Wgtr.=W, Midrange=H, Tweeter=T, Subwoofer=ST | Amplifier Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish         | Grille Color and Material | Weight, Lbs. | Price, \$       |
|--|-------------------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|--|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|----------------|---------------------------|--------------|-----------------|
| CELESTION<br>(Continued)               | DL 10                         | Ported                                     | 10                      | 6½                        | Cone          | 1¼                       | Dome         |  | 48-20<br>±3                                       | 89                      | 35                                | 530,3.8k                  | 8/                               | 29 x 14 x 12                         | Opt.,<br>Vinyl | Black                     | 42½          | 850.00<br>Pair  |
|  | DL 12                         | Pas. Rad.                                  | (2)8                    |                           |               | 1                        | Dome         |  | 58-20<br>±3                                       | 90                      | 35                                | 800,3.5k                  | 8/                               | 33 x 11 x 12                         | Opt.,<br>Vinyl | Black                     | 37¼          | 1000.00<br>Pair |
| CELLO                                  | Amati                         | Ac. Sus.                                   | 12                      | (4)1½                     | Domes         | (4)¾                     | Domes        |  |   |                         |                                   |                           |                                  | 10 x 27 x 19                         | Oak            | Black<br>Mesh             | 90           | 7000.00<br>Pair |
| CERCA                                  | Hi 150 System                 | Sat. &<br>Subwoof.<br>Sat.                 | (2)10                   | 5                         | Cone          | 1                        | Dome         |  | 34-20   | 86                      | 20                                | 2.5k                      | 8/4                              |                                      | Ceramic        | Gray                      |              | 999.95<br>Pair  |
|  | Hi 150<br>Satellite<br>System | Sat.                                       |                         | 5                         | Cone          | 1                        | Dome         |  | 800-20  | 86                      | 20                                | 2.5k                      | 8/4                              |                                      | Ceramic        | Gray                      |              | 399.95<br>Pair  |
|  | Hi 150<br>Subwoofer<br>System | Subwoof.                                   | (2)10                   |                           |               |                          |              |  | 34-1  | 86                      | 20                                | 500                       | 8/4                              |                                      | Ceramic        | Gray                      |              | 599.95<br>Pair  |
|  | Classic 120                   | Inf. Baf.                                  | 6½                      | 5                         | Cone          | 1                        | Dome         |  | 42-20   | 86                      | 20                                | 2.5k                      | 8/4                              |                                      | Ceramic        | Gray                      | 28           | 1699.95<br>Pair |
|  | Victoria 120                  | Inf. Baf.                                  | 6½                      | 5                         | Cone          | 1                        | Dome         |  | 41-20   | 86                      | 20                                | 2.5k                      | 8/4                              |                                      | Ceramic        | Gray                      | 22           | 1699.95<br>Pair |
|  | Victoria 200                  | Inf. Baf.                                  | 8                       | 5                         | Cone          | 1                        | Dome         |  | 36-20   | 86                      | 20                                | 2.5k                      | 8/4                              |                                      | Ceramic        | Gray                      | 33           | 2199.95<br>Pair |
| CERWIN-VEGA                            | Sat-6                         | Sat. &<br>Subwoof.<br>Ported               | 10                      | 6                         | Cone          | 1                        | Dome         | M,T  | 30-20<br>±3                                       | 95                      | 5                                 | 200,3.5k                  | 8/6                              | Three Pieces                         | Wood<br>Vinyl  | Black<br>Knit             | 79<br>Sys.   | 599.00<br>Sys.  |
|  | D-1                           | Ported                                     | 8                       |                           |               | 1                        | Horn         |  | 30-20<br>±4                                       | 92                      | 5                                 | 3k                        | 8/5                              | 20 x 11 x 10                         | Vinyl          | Brown<br>Knit             | 25           | 170.00          |
|  | D-2                           | Ported                                     | 10                      |                           |               | 1                        | Horn         |  | 30-20<br>±4                                       | 94                      | 5                                 | 3k                        | 8/5                              | 24 x 14 x 10                         | Vinyl          | Brown<br>Knit             | 35½          | 220.00          |
|  | D-3                           | Ported                                     | 10                      | 6                         | Cone          | 1                        | Horn         | T  | 30-20<br>±4                                       | 94                      | 5                                 | 700,3.5k                  | 8/5                              | 27 x 14 x 11                         | Vinyl          | Brown<br>Knit             | 39           | 290.00          |
|  | D-5                           | Ported                                     | 12                      | 6                         | Cone          | 1                        | Horn         | T  | 32-20<br>±4                                       | 96                      | 5                                 | 700,3.5k                  | 8/5                              | 28 x 16 x 11                         | Vinyl          | Brown<br>Knit             | 44           | 330.00          |
|  | D-9                           | Ported                                     | 15                      | (2)6                      | Cones         | 1                        | Horn         | M,T  | 29-20<br>±4                                       | 101                     | 5                                 | 500,3.5k                  | 4/4                              | 36 x 18 x 18                         | Vinyl          | Brown<br>Knit             | 85           | 525.00          |
|  | SW12B                         | Ported<br>Subwoof.                         | 12                      |                           |               |                          |              |  | 29-110  | 92                      | 5                                 | 110                       | 8/6                              | 13 x 26 x 16                         | Wood<br>Vinyl  | Black<br>Knit             | 48           | 320.00          |
|  | 200SE                         | Ported                                     | 8                       |                           |               | 1                        | Dhorm        |  | 32-20<br>±3                                       | 93                      | 5                                 | 3k                        | 6/4                              | 22 x 11 x 12                         | Vinyl          | Black<br>Knit             | 32           | 205.00          |
|  | 250SE                         | Ported                                     | 10                      | 6                         | Cone          | 1                        | Dhorm        | M,T  | 32-20<br>±3                                       | 95                      | 5                                 | 550,3.5k                  | 6/4                              | 28 x 13 x 12                         | Vinyl          | Black<br>Knit             | 41           | 300.00          |
|  | 280SE                         | Ported                                     | 12                      | 6                         | Cone          | 1                        | Dhorm        | M,T  | 32-20<br>±3                                       | 96                      | 5                                 | 550,3.5k                  | 6/4                              | 26 x 15 x 12                         | Vinyl          | Black<br>Knit             | 44           | 345.00          |
|  | 300SE                         | Ported                                     | 12                      | 7                         | Cone          | 1                        | Dhorm        | M,T  | 25-20<br>±3                                       | 98                      | 5                                 | 250,3.5k                  | 6/4                              | 32 x 15 x 16                         | Vinyl          | Black<br>Knit             | 65           | 450.00          |
|  | 380SE                         | Ported                                     | 15                      | (2)7                      | Cones         | 1                        | Dhorm        | M,T  | 29-20<br>±3                                       | 102                     | 5                                 | 250,3.5k                  | 4/4                              | 36 x 18 x 19                         | Vinyl          | Black<br>Knit             | 90           | 540.00          |
|  | AT-8                          | Ported                                     | 8                       |                           |               | 5                        | Dome         |  | 38-22<br>±3                                       | 94                      | 5                                 | 3k                        | 6/4                              | 21 x 12 x 10                         | Wood<br>Vinyl  | Black<br>Knit             | 26           | 205.00          |
|  | AT-10                         | Ported                                     | 10                      | 5                         | Cone          | 5                        | Dome         | M,T  | 30-22<br>±3                                       | 95                      | 5                                 | 400,3k                    | 6/4                              | 29 x 14 x 14                         | Wood<br>Vinyl  | Black<br>Knit             | 40           | 310.00          |
|  | AT-12                         | Ported                                     | 12                      | 5                         | Cone          | 5                        | Dome         | M,T  | 28-28<br>±3                                       | 97                      | 5                                 | 400,3k                    | 6/4                              | 30 x 16 x 14                         | Wood<br>Vinyl  | Black<br>Knit             | 55           | 345.00          |
|  | AT-15                         | Ported                                     | 15                      | (2)5                      | Cones         | 5                        | Dome         | M,T  | 28-28<br>±3                                       | 102                     | 5                                 | 400,3k                    | 4/4                              | 37 x 19 x 19                         | Wood<br>Vinyl  | Black<br>Knit             | 90           | 540.00          |
| CHAPMAN<br>SOUND                       | T-7                           | Trans.<br>Line                             | 10                      | 5                         | Cone          | 1                        | Dome         |  | 32-20<br>±3                                       | 88                      | 50                                | 200,3k                    | 4/3                              | 44 x 13 x 10                         | Oiled<br>Oak   | Black<br>Knit             | 80           | 1495.00<br>Pair |
|  | T-9                           | Trans.<br>Line                             | (2)10                   | 6½,5                      | Cones         | 1                        | Dome         |  | 25-20<br>±3                                       | 89                      | 50                                | 150,1k,3k                 | 2/1.5                            | 45 x 22 x 14                         | Oiled<br>Oak   | Black<br>Knit             | 150          | 3300.00<br>Pair |
| CHARIO                                 | 2514                          | Pas. Rad.                                  | 10,8                    | 1½                        | Dome          | 1                        | Dome         | No   | 28-20   | 85                      | 80                                | 100,500,<br>2.5k          | 4/                               | 41 x 10 x 14                         |                | Brown                     | 84           | 2500.00<br>Pair |
| CLASSIC<br>AUDIO<br>REPRO-<br>DUCTIONS | Hartfield                     | Horn                                       | 15                      | 2                         | Horn          | (2)1¼                    | Rings        |  | 35-20<br>±5                                       | 108                     | 15                                | 500,7k                    | 12/6                             | 46 x 46 x 25                         | Oiled<br>Wal.  | Ivory<br>Knit             | 300          | 9000.00<br>Pair |
| CLEMENTS<br>AUDIO                      | Reference<br>RT 7             | Compr.<br>Line                             | 8                       |                           |               | 7                        | Ribbon       | W  | 26-100k<br>±3                                     | 85                      | 30                                | 1.575k                    | 6/4                              | 11 x 19 x 48                         | Opt.,<br>Wood  | Black<br>Knit             | 100          | 2595.00<br>Pair |
|  | RT 8.0                        | Compr.<br>Line                             | 8                       |                           |               | 7                        | Ribbon       | W  | 32-100k<br>±3                                     | 85                      | 30                                | 1.575k                    | 6/4                              | 13 x 12 x 26                         | Opt.,<br>Wood  | Black<br>Knit             | 60           | 1600.00<br>Pair |
|  | RB 6.5                        | Compr.<br>Line                             | 6½                      |                           |               | 7                        | Ribbon       | W  | 36-100k<br>±3                                     | 85                      | 20                                | 1.575k                    | 6/4                              | 13 x 10 x 24                         | Opt.,<br>Wood  | Black<br>Knit             | 45           | 1200.00<br>Pair |
|  | Little "d"                    | Compr.<br>Line                             | 5¼                      |                           |               | 5                        | Ribbon       |  | 42-100k<br>±3                                     | 86                      | 20                                | 2.4k                      | 6/4                              | 7 x 10 x 16                          | Opt.           | Black<br>Knit             | 18           | 850.00<br>Pair  |
| COMMUNITY<br>LIGHT &<br>SOUND          | CSV70                         | Bass Ref.                                  | (4)12                   | (2)2                      | Compr.        | (3)1                     | PZT          | M  | 40-18<br>±4                                       | 105                     | 200                               | 700,4k                    | 4/4                              | 27 x 34 x 18                         | Oak<br>Lam.    | Brown<br>Knit             | 135          | 1049.00         |
|  | CSV52                         | Bass Ref.                                  | 15                      | 6½                        | Cone          | 1                        | PZT          |  | 40-18<br>±4                                       | 98                      | 200                               | 500,5k                    | 4/4                              | 34 x 18 x 18                         | Oak<br>Lam.    | Brown<br>Knit             | 90           | 669.00          |
|  | CSV35                         | Bass Ref.                                  | 15                      |                           |               | 1                        | PZT          |  | 60-18   | 99                      | 150                               | 2.5k                      | 8/6                              | 24 x 17 x 14                         | Oak<br>Lam.    | Brown<br>Knit             | 43           | 389.00          |
|  | CSV25                         | Bass Ref.                                  | 12                      |                           |               | 1                        | PZT          |  | 70-18   | 97                      | 100                               | 3k                        | 8/6                              | 18 x 15 x 14                         | Oak<br>Lam.    | Brown<br>Knit             | 32           | 327.00          |
| COUNTERPOINT                           | TL's                          | Ribbon &<br>Compound<br>Dynamic            | (2)8                    |                           |               | 0.6x58                   | Ribbon       |  | 35-20   | 89                      | 80                                | 400                       | 4/2                              | Four Pieces                          | Opt.           | Silk                      | 200<br>Sys.  | 2595.00<br>Sys. |

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# L O U D S P E A K E R S

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# LOUDSPEAKERS

| MANUFACTURER | Model                   | Design Principle           | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Control: Woofer = W, Midrange = M, Tweeter = T | Analogic Frequency Response, Hz to kHz, ±dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$        |
|--------------|-------------------------|----------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|---|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|------------------------------|-------------|---------------------------|--------------|------------------|
| CSI          | MDM-4                   | Ported                     | (2)6½                   |                           |               | 3½                       | Cone         |   | 60-17 ±3                                    | 89                      | 15                                | 1.5k                      | 8/5                              | 19 x 13 x 10                 | Rswd. Lam.  | Brown Cloth Alum.         | 50 Pair      | 1190.00          |
|              | MDM-TA2                 | Time Align                 | 6½                      |                           |               | ¾                        | Dome         | T   | 60-20 ±3                                    | 87                      | 15                                | 2.5k                      | 8/5                              | 16 x 12 x 9                  | Rswd. Lam.  | Black Alum.               | 40 Pair      | 1290.00          |
|              | MDM-TA3                 | Time Align                 | (2)6½                   | 3½                        | Cone          | ¾                        | Dome         | M,T   | 45-20 ±3                                    | 91                      | 15                                | 1.8k,7k                   | 8/4                              | 19 x 16 x 12                 | Rswd. Lam.  | None                      | 70 Pair      | 1590.00          |
|              | B8/70                   | ELF Subwoof.               | 8                       |                           |               |                          |              |   | 30-70 ±1                                    | 91                      | 100                               | 70                        |                                  | 16 x 19 x 12                 | Black Lam.  | Black Cloth               | 60 Pair      | 890.00           |
|              | E8/70                   | Powered ELF Subwoof.       | 8                       |                           |               |                          |              |   | 30-70 ±1                                    | 91                      | Inc.                              | 70                        |                                  | 16 x 19 x 12                 | Black Lam.  | Black Cloth               | 100 Pair     | 2790.00          |
| CYRUS        | 781                     | Bass Ref.                  | 6½                      |                           |               | ¾                        | Dome         |   | 47-20 ±3                                    | 90.5                    | 20                                | 3.5k                      | 8/6                              | 9 x 20 x 11                  | Opt., Wood  | Black Knit                | 19.8         | 499.00           |
|              | 782                     | Inf. Baf.                  | (2)6½                   |                           |               | ¾                        | Dome         |   | 49-20 ±3                                    | 91.5                    | 40                                | 3.2k                      | 4/3                              | 10 x 20 x 13                 | Opt., Wood  | Black Knit                | 30.8         | 799.00           |
| DAHLQUIST    | DQ-20i                  | Inf. Baf.                  | 10                      | 5                         | Cone          | ¾                        | Dome         |   | 20-20 ±4.5                                  | 86                      | 50                                | 400,3.5k                  | 8/5                              | 42 x 21 x 12                 | Oak         | Opt.                      | 60           | 2000.00          |
|              | DQ-12                   | Inf. Baf.                  | 8                       | 5                         | Cone          | 1                        | Dome         |   | 35-20                                       | 86                      | 40                                | 450,3.5k                  | 8/5                              | 42 x 16 x 9                  | Black       | Black                     | 42           | 1200.00          |
|              | M909i                   | Tuned Port                 | (2)8                    | 5                         | Cone          | 1                        | Dome         |   | 30-24                                       | 92                      | 20                                | 125,400,3.5k              | 8/4                              | 39 x 14 x 11                 | Opt., Wood  | Black                     | 53           | 1500.00          |
|              | M907i                   | Ac. Sus.                   | 10                      | 5                         | Cone          | 1                        | Dome         |   | 30-24                                       | 88                      | 40                                | 400,3.5k                  | 8/6                              | 27 x 14 x 11                 | Opt., Wood  | Black                     | 40           | 1000.00          |
|              | M905                    | Tuned Port                 | 8                       |                           |               | 1                        | Dome         |   | 40-24                                       | 91                      | 20                                | 2.5k                      | 8/6                              | 24 x 14 x 12                 | Opt., Wood  | Black                     | 35           | 680.00           |
|              | M905L                   | Tuned Port                 | 8                       |                           |               | 1                        | Dome         |   | 40-24                                       | 91                      | 20                                | 2.5k                      | 8/6                              | 24 x 14 x 12                 | Opt., Wood  | Black                     | 35           | 580.00           |
|              | M903                    | Tuned Port                 | 6½                      |                           |               | 1                        | Dome         |   | 48-24                                       | 90                      | 20                                | 2.8k                      | 8/6                              | 17 x 9 x 10                  | Lam.        | Black                     | 16           | 450.00           |
| DANA AUDIO   | 1                       | Ac. Sus.                   | 6½                      |                           |               | ¾                        | Dome         |   | 63-20 ±3                                    | 89                      | 15                                | 3.1k                      | 8/6                              | 15 x 9 x 8                   | Black Vinyl | Black Knit                | 25 Pair      | 155.00           |
| dB PLUS      | 440                     | Bass Ref.                  | 6½                      |                           |               | 1                        | Dome         |   | 45-22 ±3                                    | 94                      | 10                                | 3k                        | 8/4                              | 10 x 16 x 9                  | Wal. Vinyl  | Black Knit                | 16           | 360.00           |
|              | 880                     | Bass Ref.                  | 10                      |                           |               | 1                        | Dome         |   | 35-22 ±3                                    | 96                      | 10                                | 2.2k                      | 8/4                              | 12 x 24 x 12                 | Wal. Vinyl  | Black Knit                | 29           | 500.00           |
|              | 990                     | Pas. Rad.                  | 10                      |                           |               | 1                        | Dome         |   | 30-22 ±3                                    | 98                      | 10                                | 2.2k                      | 8/4                              | 12 x 33 x 11                 | Wal. Vinyl  | Black Knit                | 37           | 600.00           |
|              | 1010                    | Bass Ref.                  | (2)10                   |                           |               | 1                        | Dome         |   | 28-22 ±3                                    | 100                     | 10                                | 2k                        | 8/4                              | 12 x 37 x 11                 | Wal. Vinyl  | Black Knit                | 45           | 850.00           |
|              | 1212                    | Bass Ref.                  | (2)12                   | 6½                        | Cone          | 1                        | Dome         |   | 25-22 ±3                                    | 102                     | 10                                | 300,2k                    | 8/4                              | 43 x 15 x 16                 | Wal. Vinyl  | Black Knit                | 54           | 1200.00          |
| DBX          | Soundfield 50           | Vented                     | 10                      | 6½,4                      | Cones         | (3)½                     | Domes        |   | 34-20 ±2.5                                  | 91                      | 30                                | 200,800,3.15k             | 4/2.5                            | 21 x 16 x 49                 | Opt.        | Opt.                      | 80           | 2000.00          |
|              | Soundfield 150          | Vented                     | 10                      | 4                         | Cone          | (3)½                     | Domes        |   | 39-20 ±3                                    | 91                      | 25                                | 450,3.15k                 | 4/2.5                            | 21 x 16 x 40                 | Opt.        | Opt.                      | 60           | 1500.00          |
|              | Soundfield 1500         | Vented                     | 8                       | 4                         | Cone          | (2)½                     | Domes        |   | 44-20 ±3                                    | 92                      | 25                                | 450,3.15k                 | 4/2.5                            | 16 x 14 x 33                 | Opt.        | Opt.                      | 35           | 1000.00          |
|              | Soundfield 2500         | Vented                     | 6½                      | 2½                        | Cone          | (2)½                     | Domes        |   | 49-20 ±3                                    | 90                      | 20                                | 1.6k,4.5k                 | 6/4                              | 12 x 8 x 29                  | Opt.        | Opt.                      | 21           | 600.00           |
|              | Soundfield 5000         | Vented                     | 6½                      | 2½                        | Cone          | (2)5                     | Domes        |   | 65-20 ±3                                    | 89                      | 20                                | 1.6k,4.5k                 | 6/4                              | 15 x 12 x 8                  | Opt., Vinyl | Opt.                      | 13           | 450.00           |
|              |                         |                            |                         |                           |               |                          |              |   |   |                         |                                   |                           |                                  |                              |             |                           |              |                  |
| DCM          | Half Time               | Ac. Sus.                   | 6½                      |                           |               | ¾                        | Dome         |   | 90-20                                       | 91                      | 10                                | 2.5k                      | 8/                               | 10 x 8 x 8                   | Dark Oak    | Brown Knit                |              | From 219.00      |
|              | Triple Time System      | Sat. & Woofer              | (3)6½                   |                           |               | ¾                        | Dome         |   | 50-20                                       | 91                      | 10                                | 120,2.5k                  | 8/                               | Three Pieces                 | Dark Oak    | Brown Knit                |              | Pair From 469.00 |
|              | Double Time Bass Module | Trans. Line Woofer         | 6½                      |                           |               |                          |              |   | 60-150                                      |                         |                                   |                           | 8/                               |                              | Dark Oak    | Brown Knit                |              | Sys. From 269.00 |
|              | Full Time Bass System   | Trans. Line Woofer         | (2)6½                   |                           |               |                          |              |   | 50-150                                      |                         |                                   |                           | 8/                               | 31 x 10 x 10                 | Dark Oak    | Brown Knit                |              | From 399.00      |
|              | Time Frame TF-1000      | Trans. Line                | 8                       | 4                         | Cone          | ¾                        | Dome         |   | 26-20                                       | 91                      | 20                                |                           | 8/4                              | 49 x 19 x 8                  | Dark Oak    | Brown Knit                | 49           | From 999.00      |
|              | Time Frame TF-700       | Trans. Line                | 8                       | 4                         | Cone          | ¾                        | Dome         |   | 29-20                                       | 90                      | 20                                |                           | 8/4                              | 45 x 18 x 7                  | Dark Oak    | Brown Knit                | 42           | Pair From 799.00 |
|              | Time Frame TF-500       | Trans. Line                | 6½                      |                           |               | ¾                        | Dome         |   | 31-20                                       | 89                      | 10                                | 2.5k                      | 8/4                              | 41 x 17 x 7                  | Dark Oak    | Brown Knit                | 44           | Pair From 699.00 |
|              | Time Frame TF-350       | Trans. Line                | 6½                      |                           |               | ¾                        | Dome         |   | 35-20                                       | 89                      | 10                                | 2.5k                      | 8/4                              | 37 x 15 x 7                  | Dark Oak    | Brown Knit                | 31           | Pair From 449.00 |
|              | Time Frame TF-275       | Hybrid Coaxial Trans. Line | 6½                      |                           |               | ¾                        | Dome         |   | 42-20                                       | 91                      | 10                                | 3k                        | 8/4                              | 38 x 15 x 7                  | Dark Oak    | Brown Knit                | 21           | Pair From 369.00 |
|              | Time Window 3           | Trans. Line                | 8                       | 6½                        | Cone          | (2)¾                     | Domes        | M,T   | 25-20                                       | 90                      | 15                                |                           | 8/4                              | 39 x 16 x 12                 | Dark Oak    | Brown Knit                | 45           | From 1399.00     |
|              | Time Window 1A          | Hybrid Trans. Line         | (2)6½                   |                           |               | (2)¾                     | Domes        |   | 30-20                                       | 91                      | 10                                | 2.8k                      | 8/4                              | 36 x 15 x 12                 | Dark Oak    | Brown Knit                | 32           | Pair From 899.00 |
|              | Time Piece              | Trans. Line                | 6½                      |                           |               | ¾                        | Dome         |   | 60-20                                       | 91                      | 10                                | 2.5k                      | 8/4                              | 17 x 8 x 8                   | Dark Oak    | Brown Knit                | 18           | Pair From 269.00 |

*“If the PS•3 speakers were sold like magic elixirs, I would have bought a case!”\**

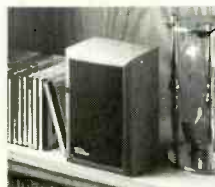


## Introducing the unique new PS•3 speaker system.

With every two-piece stereo speaker system you must resolve two quandaries: 1) where will it sound best, and 2) where will it fit? Often these are different and conflicting places in your listening room. Even worse, the best place for bass response is rarely ideal for stereo imaging.

*“The PS•3 satellites sound smooth and natural.”*

The new Design Acoustics PS•3 Micro-Monitor™ three-piece design offers a versatile answer to these dilemmas. Simply place the two tiny Point Source™ oak veneer satellites exactly where they create the best stereo image. Small and handsome, they fit almost anywhere without compromise.



*“The woofer continues the smooth work...”*

Then locate the bass module wherever it creates the smoothest, deepest bass...even out of sight. Again, without sonic compromise. The result is far better imaging and wider, flatter response than you can hear from any comparable two-enclosure system. And the PS•3 looks and sounds great no matter the shape or size of your room.

*“...you can tune the bass...without affecting the midrange or treble balance.”*

The new PS•3 has many more advantages that make it the ideal system for your home. Don't choose any speaker system without first hearing and seeing the new PS•3. Visit a Design Acoustics dealer near you. Write for brochure and dealer list today.

\*All quotes by noted audio critic Rich Warren, Chicago Tribune, May 12, 1989

**DA DESIGN ACOUSTICS**  
An Audio-Technica Company  
1225 Commerce Drive, Stow, OH 44224 • (216) 686-2600



# LOUDSPEAKERS

| MANUFACTURER              | Model                   | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Low Control Wgt. = W.<br>Midrange = M., Tweeter = T., Superwoofer = ST | Amplifier Frequency Response,<br>Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms:<br>Nominal/Minimum | Dimensions, Inches<br>(To Nearest Inch) | Finish           | Grille Color and Material | Weight, Lbs. | Price, \$         |
|---------------------------|-------------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|---|--|-------------------------|-----------------------------------|---------------------------|-------------------------------------|---|------------------|---------------------------|--------------|-------------------|
| DELAC                     | S10w                    | Sealed Box Sat. & Subwoof. Sealed Box      | (2)4½, 8½               |                           |               | ¾                        | Dome         |   | 35-20 $\pm$ 3  | 85                      | 25                                | 120, 4.5k                 | 4/3                                 | Three Pieces                            | Opt.             | Black Foam                | 70 Sys.      | 1295.00 Sys.      |
|                           | S10e                    | Sealed Box                                 | (2)4½                   |                           |               | ¾                        | Dome         |   | 60-20 $\pm$ 3  | 85                      | 15                                | 4.5k                      | 4/3                                 | 5 x 3 x 40                              | Opt.             | Black Foam                | 50 Pair      | 1095.00 Pair w/EQ |
|                           | S8w                     | Sealed Box Sat. & Subwoof. Sealed Box      | 4½, 8½                  |                           |               | ¾                        | Dome         |   | 35-20 $\pm$ 3  | 85                      | 25                                | 120, 3k                   | 8/4                                 | Three Pieces                            | Opt.             | Black Foam                | 40 Sys.      | 945.00 Sys.       |
|                           | S8e                     | Sealed Box                                 | 4½                      |                           |               | ¾                        | Dome         |   | 70-20 $\pm$ 3  | 85                      | 15                                | 3k                        | 8/7                                 | 5 x 5 x 10                              | Opt.             | Black Foam                | 20 Pair      | 745.00 Pair w/EQ  |
| DENNESEN                  | Bravura                 | ES Hybrid                                  | 8                       | 6½                        | Cone          | (4)15 Sq. In.            | ES           |   | 40-30 $\pm$ 2  | 94                      | 25                                | 125, 3.5k                 |                                     | 12 x 14 x 51                            | Opt.             | Black Foam                | 60           | 1650.00 Pair      |
| DESIGN ACOUSTICS          | PS-3                    | Sat. & Subwoof.                            | (2)6                    | 3½                        | Cone          | ¾                        | Dome         |   | 50-20  | 88                      | 20                                | 200, 3k                   | 8/                                  | Three Pieces                            | Black Oiled Wal. | Black                     | 32 Sys.      | 599.95 Sys.       |
|                           | PS-10                   | Ac. Sus.                                   | 10                      | 5                         | Cone          | 1                        | Dome         | T   | 47-22  | 90                      | 15                                | 200, 2k                   | 8/                                  | 11 x 14 x 14                            | Black Oak Vinyl  | Black                     | 25           | 259.95            |
|                           | PS-8b                   | Ac. Sus.                                   | 8                       |                           |               | 1                        | Dome         |   | 50-20  | 90                      | 15                                | 2k                        | 8/                                  | 10 x 13 x 12                            | Black Oak Vinyl  | Black                     | 15           | 184.95            |
|                           | PS-6                    | Ac. Sus.                                   | 6                       |                           |               | ¾                        | Dome         |   | 55-20  | 88                      | 10                                | 3k                        | 8/                                  | 8 x 12 x 12                             | Black Oak Vinyl  | Black                     | 12           | 129.95            |
|                           | PS-6V                   |  | 6                       |                           |               | ¾                        | Dome         |   | 55-20  | 88                      | 10                                | 3k                        | 8/                                  | 8 x 12 x 12                             | Black Oak Vinyl  | Black                     | 12           | 139.95            |
|                           | PS-55                   | Vented                                     | 5                       |                           |               | ¾                        | Dome         |   | 65-20  | 88                      | 10                                | 4k                        | 8/                                  | 7 x 10 x 6                              | Black Oak Vinyl  | Black                     | 6            | 109.95            |
|                           | DA-360                  | Outdoor Omni                               | 6                       |                           |               | 1½                       | Piezo        |   | 100-18   | 84                      | 15                                | 3k                        | 8/                                  | 7 Dia. x 10                             | Black Vinyl      | Black                     | 5            | 119.95            |
| DESKTOP LOUDSPEAKER       | DLS-3x                  | Sat. & Subwoof.                            | (8)6½                   | (2)2½                     | Cones         | (2)1                     | Domes        |   | 22-25 $\pm$ 3  | 88                      | 30                                | 170, 3.3k                 | 4/3.7                               | Four Pieces                             | Black Lacq.      | Gray Knit                 | 64 Sys.      | 2399.00 Sys.      |
|                           | DLS-2b                  | Sat. & Subwoof.                            | (2)6½                   | (2)2½                     | Cones         | (2)1                     | Domes        |   | 38-19 $\pm$ 4  | 87                      | 25                                | 170, 3.3k                 | 4/3.7                               | Four Pieces                             | Opt.             | Black Knit                | 42 Sys.      | 899.00 Sys.       |
|                           | DLS-1a                  | Sat. & Subwoof.                            | (2)6½                   | (2)2½                     | Cones         | (2)1                     | Domes        |   | 47-19 $\pm$ 4  | 86                      | 20                                | 170, 3.3k                 | 4/3.7                               | Three Pieces                            | Opt.             | Black Knit                | 30 Sys.      | 649.00 Sys.       |
| DIGITAL DESIGNS           | 161                     | Ac. Sus.                                   | 6½                      |                           |               | 1                        | Dome         | W   | 55-20 $\pm$ 3  | 90                      | 10                                | 3.5k                      | 4/                                  | 14 x 9 x 11                             | Opt.             | Black Cloth               | 32 Pair      | 359.00 Pair       |
|                           | 261                     | Ac. Sus.                                   | (2)6½                   |                           |               | 1                        | Dome         | W   | 50-20 $\pm$ 3  | 90                      | 10                                | 3.5k                      | 8/                                  | 18 x 10 x 12                            | Opt.             | Black Cloth               | 58 Pair      | 479.00 Pair       |
| DUNTECH                   | Sovereign 2001          | Closed Box                                 | (2)7, (2)12             | (2)2                      | Domes         | ¾                        | Dome         | No  | 27-20 $\pm$ 2  | 90                      | 50                                | 300, 2k, 6k               | 4/4                                 | 74 x 14 x 32                            | Rswd.            | Black Knit                | 375          | 15,500.00 Pair    |
|                           | Princess PCL-1100       | Closed Box                                 | (2)10                   | (2)4¾                     | Cones         | ¾                        | Dome         | No  | 38-20 $\pm$ 2  | 90                      | 50                                | 500, 5k                   | 4/4                                 | 71 x 12 x 17                            | Rswd.            | Black Knit                | 160          | 8500.00 Pair      |
|                           | Crown Princess PCL-1000 | Closed Box                                 | (2)10                   | (2)4¾                     | Cones         | ¾                        | Dome         | No  | 38-20 $\pm$ 2  | 90                      | 50                                | 500, 5k                   | 4/4                                 | 71 x 12 x 15                            | Rswd.            | Black Knit                | 121          | 7500.00 Pair      |
|                           | Marquis PCL-500         | Closed Box                                 | (2)8                    | (2)4¾                     | Cones         | ¾                        | Dome         | No  | 42-20 $\pm$ 2  | 93                      | 50                                | 500, 5k                   | 4/4                                 | 60 x 10 x 15                            | Oak              | Black Knit                | 150          | 5500.00 Pair      |
|                           | Dutchess PCL-15         | Closed Box                                 | 7                       |                           |               | 1                        | Dome         | No  | 50-20  | 83                      | 50                                | 500                       | 6/6                                 | 9 x 13 x 8                              | Black Oak        | Black Knit                | 14           | 1095.00 Pair      |
|                           | Vicount PCL-200         | Closed Box                                 | (2)8                    |                           |               | 1                        | Dome         | No  | 45-20  | 93                      | 50                                | 500                       | 4/4                                 | 48 x 10 x 14                            | Black Oak        | Black Knit                | 85           | 2600.00 Pair      |
|                           | Baron                   | Closed Box                                 | 7                       |                           |               | ¾                        | Dome         | No  | 55-20 $\pm$ 1.5                                      | 90                      | 50                                | 1k                        | 4/4                                 | 38 x 8 x 10                             | Opt., Lacq.      | Black Knit                | 30           | 1800.00 Pair      |
|                           |                         |  |                         |                           |               |                          |              |   |  |                         |                                   |                           |                                     |   |                  |                           |              |                   |
| DYNAMIC ELECTRO ACOUSTICS | Ovation                 | Vented                                     | (2)7                    |                           |               | 1                        | Dome         |   | 30-20 $\pm$ 3  | 90                      |                                   | 2.5k                      | 8/7                                 | 10 x 13 x 47                            | Opt., Wood       | Opt.                      | 75           | 1950.00 Pair      |
|                           | Ovation B               | Vented                                     | 9                       |                           |               | 1                        | Dome         |   | 30-20 $\pm$ 3  | 89                      |                                   | 2.5k                      | 8/7                                 | 11 x 11 x 20                            | Opt., Wood       | Opt.                      | 25           | 1250.00 Pair      |
| DYNAUDIO                  | Image                   | Sealed                                     | 6½                      |                           |               | 1                        | Dome         |   |  |                         | 30                                | 2.5k                      | 8/6                                 | 10 x 16 x 8                             | Oak              | Brown Knit                |              | Kit, 350.00 Pair  |
|                           | MSP 110                 | Aperiodic                                  | 8                       |                           |               | 1                        | Dome         |   | 36-25 $\pm$ 3  | 86                      |                                   | 3.5k                      | 4/3                                 | 19 x 12 x 13                            | Rswd.            | Black Knit                | 30           | 590.00            |
|                           | MSP 220                 | Aperiodic                                  | 8                       | 2                         | Dome          | 1                        | Dome         |   | 32-25 $\pm$ 3  | 86                      |                                   | 800, 4k                   | 4/3                                 | 24 x 11 x 13                            | Rswd.            | Black Knit                | 36           | 790.00            |
|                           | MSP 330                 | Aperiodic                                  | (2)8                    | 2                         | Dome          | 1                        | Dome         |   | 28-25 $\pm$ 3  | 88                      |                                   | 800, 4.5k                 | 4/3                                 | 42 x 11 x 13                            | Rswd.            | Black Knit                | 78           | 1350.00           |
|                           | Contour I               | Aperiodic                                  | 6½                      |                           |               | 1                        | Dome         |   | 40-25 $\pm$ 3  | 87                      |                                   | 2.8k                      | 4/3                                 | 14 x 9 x 11                             | Rswd.            | Black Knit                | 18           | 670.00            |
|                           | Contour II              | Aperiodic                                  | (2)6½                   | 2                         | Dome          | 1                        | Dome         |   | 36-25 $\pm$ 3  | 88                      |                                   | 1.1k, 4k                  | 4/3                                 | 39 x 9 x 11                             | Rswd.            | Black Knit                | 40           | 1590.00           |
|                           | Compound 2              | Compound                                   | (2)6½                   |                           |               | 1                        | Dome         |   | 35-25 $\pm$ 3  | 84                      |                                   | 3k                        | 8/5                                 | 14 x 9 x 11                             | Rswd.            | Black Knit                | 27           | 1190.00           |
|                           | Compound 3              | Compound                                   | (2)6½                   | 2                         | Dome          | ¾                        | Dome         |   | 33-33 $\pm$ 3  | 84                      |                                   | 1.2k, 5k                  | 8/5                                 | 19 x 9 x 11                             | Rswd.            | Black Knit                | 37           | 1490.00           |
|                           | Compound 4              | Compound                                   | (2)8                    | 3                         | Dome          | 1                        | Dome         |   | 28-26 $\pm$ 3  | 86                      |                                   | 600, 3.5k                 | 8/5                                 | 45 x 12 x 14                            | Rswd.            | Black Knit                | 93           | 3100.00           |
|                           | Consequence             | Compound                                   | (2)12                   | (2)5½                     | Cone, Dome    | 1, ¾                     | Domes        |   | 25-33 $\pm$ 3  | 85                      |                                   | 120, 1.8k, 5k, 12k        | 4/3                                 | 49 x 16 x 24                            | Rswd.            | Black Knit                | 186          | 8900.00           |

# "They Were Designed To Play Music And Make It Sound Like Music..."

This They Do Very Well, In A Most Unobtrusive Way, At A Bargain Price... It's Hard To Imagine Going Wrong With Ensemble™

Julian Hirsch  
Stereo Review, Sept. '88

Cambridge SoundWorks has created Ensemble™, a speaker system that can provide the sound once reserved for the best speakers under laboratory conditions. It virtually disappears in your room. And because we market it directly, Ensemble costs hundreds less than it would in stores.



Henry Kloss, creator of the dominant speaker models of the '50s (Acoustic Research), '60s (KLH), and '70s (Advent), brings you Ensemble, a genuinely new kind of speaker system for the '90s, available only factory direct from Cambridge SoundWorks.

## The best sound comes in four small packages.

Ensemble consists of four speaker units. Two compact low-frequency speakers reproduce the deep bass, while two small satellite units reproduce the rest of the music, making it possible to reproduce just the right amount of energy in each part of the musical range without turning your listening room into a stereo showroom.

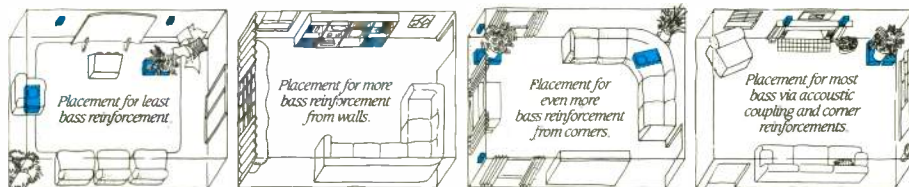
## Your listening room works with Ensemble, not against it.

No matter how well a speaker performs, at home the listening room takes over. If you put a conventional speaker where the room can help the low bass, it may hinder the upper ranges, or vice-versa.

## What Henry Kloss tells his friends

Every time I came out with a new speaker at AR, KLH, or Advent, my friends would ask me, "Henry, is it worth the extra money for me to trade up?" And every time I would answer, "No, what you've already got is still good enough."

But today, with the introduction of Ensemble, I tell them, "Perhaps now is the time to give your old speakers to the children."

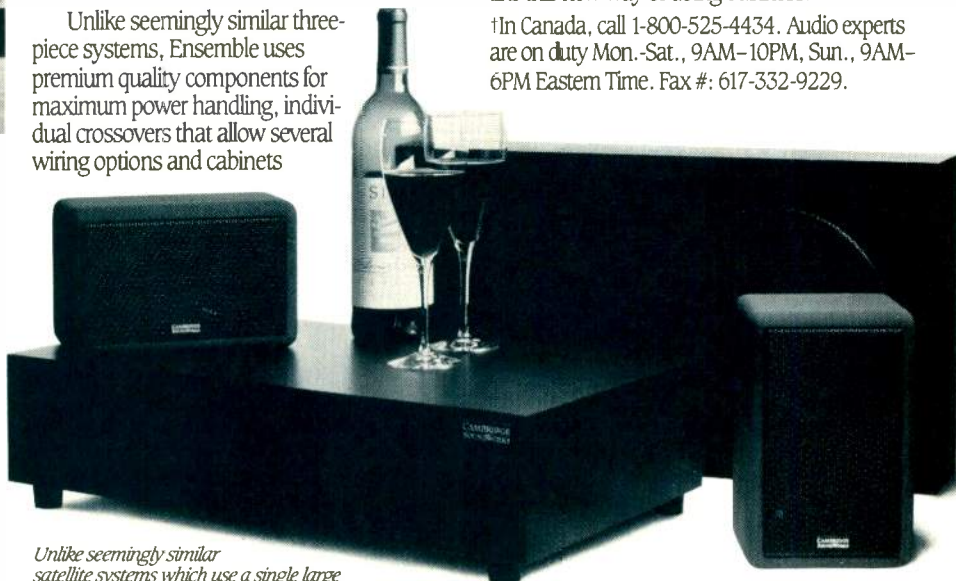


You can put Ensemble's low-frequency units exactly where they should go for superb bass. You can't do this with conventional speakers because you have to be concerned about the upper frequencies coming from the same enclosures as the low ones.

Ensemble, on the other hand, *takes advantage* of your room's acoustics. The ear can't tell where bass comes from, which is why Ensemble's bass units can be tucked out of the way—on the floor, atop bookshelves, or under furniture. The satellites can be hung directly on the wall, or placed on windowsills or shelves. No bulky speakers dominate your living space, yet Ensemble reproduces the deep bass that no mini speakers can.

## Not all the differences are as obvious as our two subwoofers.

Unlike seemingly similar three-piece systems, Ensemble uses premium quality components for maximum power handling, individual crossovers that allow several wiring options and cabinets



Unlike seemingly similar satellite systems which use a single large subwoofer, Ensemble uses two separate, compact bass units. They fit more gracefully into your living environment, and help minimize the effects of the listening room's standing waves.

ruggedly constructed for proper acoustical performance. We even gold-plate all connectors to prevent corrosion. An even bigger difference is how we sell it...

## Thousands agree: the best showroom is your living room.

We make it possible to audition Ensemble the *right* way—in your own home. In fact, Ensemble is sold *only* by Cambridge SoundWorks directly from the factory. Listen for hours without a salesman hovering nearby. If after 30 days you're not happy, return Ensemble for a full refund.

At only \$499\*—complete with all hardware and 100' of speaker cable—Ensemble is *the* value on today's speaker market.

Call 1-800-AKA-HIFI<sup>†</sup>  
(1-800-252-4434)

Our toll-free number will connect you to a Cambridge SoundWorks audio expert. He or she will answer all your questions, take your order and arrange surface shipment via UPS. Your Cambridge SoundWorks audio expert will continue as your personal contact with us. We think you'll like this new way of doing business.

<sup>†</sup>In Canada, call 1-800-525-4434. Audio experts are on duty Mon.-Sat., 9AM-10PM, Sun., 9AM-6PM Eastern Time. Fax #: 617-332-9229.

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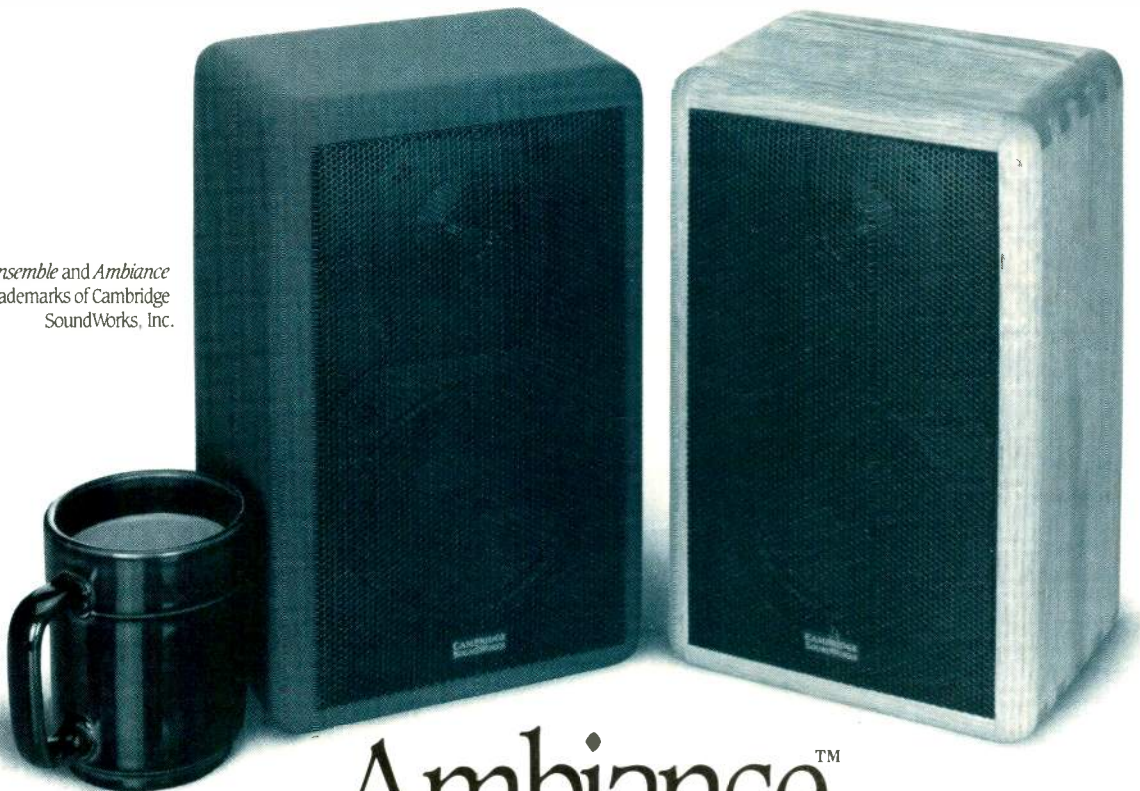
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# LOUDSPEAKERS

| MANUFACTURER         | Model                    | Design Principle                                   | Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls: Woofer, W, Midrange, M, Tweeter, T, Subwoofer, S | Acoustic Frequency Response, Hz to kHz, ±dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish     | Grille Color and Material | Weight, Lbs. | Price, \$ |
|----------------------|--------------------------|--|--------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|---|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|------------|---------------------------|--------------|-----------|
| EBOWY ACOUSTICS      | Seven                    | Pressure Release                                   | 6                        |                         |                           | 1             | Dome                     |              | 50-22 ±3  | 90  | 20                      |                                   | 8/7                       | 10 x 8 x 16                      | Black Oak                            | Black Knit |                           | 700.00       |           |
|                      | Eleven                   | Pressure Release                                   | 9                        |                         |                           | 1             | Dome                     |              | 40-22 ±3  | 91  | 25                      |                                   | 8/7                       | 12 x 14 x 25                     | Black Oak                            | Black Knit |                           | 1100.00      |           |
|                      | Seventeen                | Trans. Line  | 6                        |                         |                           | 1             | Dome                     |              | 30-22 ±3  | 91  | 30                      |                                   | 8/5                       | 12 x 10 x 50                     | Black Lacq.                          | Black Knit |                           | 1700.00      |           |
|                      | Twenty                   | Trans. Line  | 12                       |                         |                           | 1             | Dome                     |              | 18-22 ±3  | 92  | 30                      |                                   | 8/7                       |                                  | Black Lacq.                          | Black Knit |                           | 2000.00      |           |
|                      | Twenty One               | Trans. Line Subwoof.                               | 12                       |                         |                           |               |                          |              | 18-100 ±3   | 92  | 30                      |                                   | 8/7                       |                                  | Black Lacq.                          | Black Knit |                           | 2100.00      |           |
| ELECTRO-VOICE        | Sentry 100A Monitor      | B4 Vented  | 8                        |                         |                           | 1½            | Dome                     | T            | 45-18 ±3  | 91  |                         | 2k                                | 6/4.5                     | 17 x 12 x 11                     | Black Vinyl                          | Gray Knit  | 28                        | 255.00       |           |
|                      | Sentry 100EL Monitor     | Powered B4 Vented                                  | 8                        |                         |                           | 1½            | Dome                     | T            | 45-18 ±3  |   | Inc.                    | 2k                                | 30k/10k                   | 17 x 12 x 12                     | Black Vinyl                          | Gray Knit  | 33                        | 524.00       |           |
|                      | Sentry 500 Monitor       | B4 Vented  | 12                       |                         |                           | 1½            | Dome                     | T            | 40-18 ±3  | 96  |                         | 1.5k                              | 8/6                       | 24 x 27 x 13                     | Black Vinyl                          | Gray Knit  | 70                        | 499.00       |           |
|                      | Sentry 505 Monitor       | B4 Vented  | 12                       |                         |                           | 1½            | Dome                     | T            | 40-18 ±3  | 96  |                         | 1.5k                              | 8/6                       | 19 x 26 x 19                     | Black Vinyl                          | Gray Knit  | 60                        | 499.00       |           |
| EMIWENT TECHNOLOGY   | LFT-III                  | Planar Mag.  | 441 Sq. In.              | 126 Sq. In.             | Planar Mag.               | 21 Sq. In.    | Planar Mag.              | M, T         | 35-20 ±4  | 83  | 100                     | 400,7k                            | 4/3.7                     | 59 x 27 x 12                     | Oiled Oak                            | Black Poly | 95                        | 3250.00      |           |
|                      | LFT-IV                   | Planar Mag.  | 214 Sq. In.              | 63 Sq. In.              | Planar Mag.               | 21 Sq. In.    | Planar Mag.              | T            | 45-20 ±4  | 80  | 100                     | 400,7k                            | 8/7                       | 61 x 18 x 12                     | Oiled Oak                            | Black Poly | 60                        | 1850.00      |           |
|                      | LFT-VI                   | Planar Mag.  | 321 Sq. In.              | 94 Sq. In.              | Planar Mag.               | 10 Sq. In.    | Planar Mag.              | M, T         | 38-20 ±4  | 83  | 100                     | 400,10k                           | 6/4                       | 78 x 18 x 2                      | Oiled Oak                            | Black Poly | 90                        | 2900.00      |           |
| ENERGY               | 22 Pro Monitor           | Bass Ref.  | 7                        |                         |                           | 1½            | Dome                     |              | 28-45 ±3  | 86  | 20                      | 1.5k                              | 8/4                       | 25 x 11 x 12                     | Opt.                                 | Black      | 34                        | 900.00       |           |
|                      | 22 Reference             | Bass Ref.  | 7                        |                         |                           | 1½            | Dome                     |              | 28-45 ±3  | 86  | 20                      | 1.5k                              | 8/4                       | 25 x 11 x 12                     | Opt.                                 | Black      | 34                        | 1200.00      |           |
|                      | 22 Reference Connoisseur | Bass Ref.  | 7                        |                         |                           | 1½            | Dome                     |              | 25-45 ±2  | 86  | 20                      | 1.5k                              | 8/4                       | 35 x 11 x 14                     | Opt., Ven.                           | Opt.       | 80                        | From 1650.00 |           |
|                      | ESM-1S                   | Bass Ref.  | 8                        |                         |                           | 1             | Dome                     |              | 30-22 ±3  | 86  | 15                      | 2k                                | 8/4                       | 24 x 11 x 11                     | Opt.                                 | Black Knit | 35                        | 500.00       |           |
|                      | ESM-2S                   | Bass Ref.  | 8                        |                         |                           | 1             | Dome                     |              | 40-22 ±3  | 86  | 12                      | 2k                                | 8/4                       | 23 x 11 x 11                     | Opt.                                 | Black Knit | 24                        | 400.00       |           |
|                      | ESM-3                    | Bass Ref.  | 8                        |                         |                           | 1             | Dome                     |              | 45-22 ±3  | 86  | 10                      | 2k                                | 8/4                       | 20 x 10 x 9                      | Opt.                                 | Black      | 20                        | 330.00       |           |
|                      | ESM-4                    | Bass Ref.  | 6½                       |                         |                           | ¾             | Dome                     |              | 60-20 ±3  | 88  | 10                      | 2.7k                              | 8/4                       | 9 x 13 x 9                       | Opt., Vinyl                          | Black Knit | 11                        | 230.00       |           |
| ENTEC                | L-110                    | Powered Servo Subwoof.                             | 10                       |                         |                           |               |                          | W            | 18-100 ±2   |   | Inc.                    | 100                               |                           | 24 x 12 x 16                     | Opt.                                 | Black Foam | 65                        | 2250.00      |           |
|                      | L-120                    | Powered Servo Subwoof.                             | (2)10                    |                         |                           |               |                          | W            | 15-100 ±2   |   | Inc.                    | 100                               |                           | 24 x 12 x 24                     | Opt.                                 | Black Foam | 85                        | 2749.00      |           |
|                      | L-130                    | Powered Servo Subwoof.                             | (3)10                    |                         |                           |               |                          | W            | 12-100 ±2   |   | Inc.                    | 100                               |                           | 36 x 12 x 24                     | Opt.                                 | Black Foam | 140                       | 6995.00      |           |
|                      | L-160                    | Powered Servo Subwoof.                             | (6)10                    |                         |                           |               |                          | W            | 12-100 ±2   |   | Inc.                    | 100                               |                           | 72 x 12 x 24                     | Opt.                                 | Black Foam | 255                       |              |           |
|                      | L-1120                   | Powered Servo Subwoof.                             | (12)10                   |                         |                           |               |                          | W            | 12-100 ±2   |   | Inc.                    | 100                               |                           | 78 x 18 x 24                     | Opt.                                 | Black Foam | 400                       |              |           |
|                      | L-1x                     | Powered Servo Subwoof.                             | 10                       |                         |                           |               |                          | W            | 20-100 ±4   |   | Inc.                    | 100                               |                           | 16 x 16 x 18                     | Gran.                                |            | 45                        | 1295.00      |           |
|                      | 328                      | Powered Servo Subwoof. Line Source Sat. & Subwoof. | (6)10                    | (9)4                    | Cones                     | (2)           | Ribbons                  | W, T         | 12-30 ±5  | 91  | 200                     | 100,400                           |                           | Four Pieces                      | Opt.                                 | Opt.       |                           |              |           |
| EPIGURE              | 1                        | Vented, Sixth Order                                | (2)8                     | (2)4                    | Cones                     | 1             | Dome                     |              | 32-20 ±3  | 90  | 20                      | 160,500, 2.5k                     | 6/4                       | 43 x 13 x 12                     | Mahog Ven.                           | Gray Knit  | 57                        | 1400.00      |           |
|                      | 2                        | Vented   | (2)8                     | 4                       | Cone                      | 1             | Dome                     |              | 38-20 ±3  | 90  | 10                      | 190,500, 2.5k                     | 6/4                       | 35 x 13 x 12                     | Mahog Ven.                           | Gray Knit  | 44                        | 450.00       |           |
|                      | 3                        | Vented   | 8                        | 4                       | Cone                      | 1             | Dome                     |              | 42-20 ±3  | 90  | 10                      | 500,2.5k                          | 6/4                       | 30 x 13 x 12                     | Mahog Ven.                           | Gray Knit  | 36                        | 350.00       |           |
|                      | 4                        | Vented   | 8                        |                         |                           | 1             | Dome                     |              | 48-20 ±3  | 90  | 10                      | 2k                                | 8/5                       | 20 x 12 x 12                     | Mahog Ven.                           | Gray Knit  | 21                        | 225.00       |           |
|                      | 5                        | Vented   | 6                        |                         |                           | 1             | Dome                     |              | 55-20 ±3  | 89  | 10                      | 2k                                | 8/5                       | 16 x 10 x 10                     | Mahog Ven.                           | Gray Knit  | 16                        | 175.00       |           |
|                      | 5(V)                     | Vented   | 6                        |                         |                           | 1             | Dome                     |              | 55-20 ±3  | 89  | 10                      | 2k                                | 8/5                       | 16 x 10 x 10                     | Mahog Vinyl                          | Gray Knit  | 16                        | 150.00       |           |
|                      | 3β                       | Vented   | 8                        | 4                       | Cone                      | 1             | Dome                     |              | 45-20 ±3  | 90  | 10                      |                                   | 6/4                       | 24 x 13 x 12                     | Black Vinyl                          | Gray Knit  | 18                        | 300.00       |           |
|                      | 5β+                      | Vented   | 6                        |                         |                           | 1             | Dome                     |              | 50-20 ±3  | 89  | 10                      |                                   | 8/5                       | 21 x 10 x 10                     | Black Vinyl                          | Gray Knit  | 34                        | 200.00       |           |
| EPIK MONITOR SYSTEMS | Tower                    | Aperiodic  | 10                       | 3                       | Dome                      | 1             | Dome                     |              | 100-22 ±2   | 91  | 100                     | 380,3.8k                          | 8/5                       | 22 x 20 x 52                     | Opt., Wood                           | Opt., Knit | 350                       | 4500.00      |           |
|                      | LSM (VHR)                | Aperiodic  | (2)6                     | (2)4                    | Cones                     | 1             | Dome                     |              | 100-22 ±2   | 92  | 100                     | 250,2.5k                          |                           | 10 x 13 x 42                     | Opt., Wood                           | Opt., Knit | 95                        | 2500.00      |           |
|                      | LSM                      | Aperiodic  | (2)8                     | (2)4                    | Cones                     | 1             | Dome                     |              | 32-18 ±4  | 90  | 100                     | 400,2.5k                          |                           | 13 x 17 x 52                     | Opt., Wood                           | Opt., Knit | 110                       | 1695.00      |           |
|                      | 210C                     | Trans. Line Subwoof.                               | (2)10                    |                         |                           |               |                          |              | 25-100 ±4   | 90  | 100                     | 100                               |                           | 13 x 17 x 52                     | Opt., Wood                           | Opt., Knit | 225                       | 1895.00      |           |

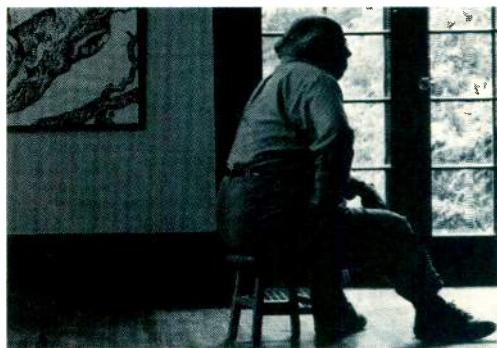
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| MANUFACTURER          | Model                   | Design Principle                   | Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type     | Tweeter Diameter, Inches | Tweeter Type | Speaker Level Control? Model = w.<br>Midrange = M, Tweeter = T, Superwoofer = ST | Anchoic Frequency Response,<br>Hz to kHz, $\pm$ dB | SPL, 1 Watt, 1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz  | Impedance, Ohms:<br>Nominal/Minimum | Dimensions, Inches<br>(To Nearest Inch) | Finish                 | Grille Color and Material | Weight, Lbs.       | Price, \$  |
|-----------------------|-------------------------|------------------------------------|--------------------------|-------------------------|---------------------------|-------------------|--------------------------|--------------|--|--|--------------------------|-----------------------------------|----------------------------|-------------------------------------|---|------------------------|---------------------------|--------------------|--|
| EPOS                  | ES14                    | Inf. Baf.                          | 8                        |                         |                           | 1                 | Dome                     |              |  | 36-20<br>$\pm$ 3                                   | 86                       | 35                                |                            | 8/7                                 | 20 x 19 x 12                            | Opt.,<br>Wood          | Black<br>Foam             | 25                 | 1245.00<br>Pair;<br>w/out<br>Grilles,<br>1195.00<br>Pair |
| ESSENCE               | Amethyst 30             | Trans. Line                        | 6                        |                         |                           | 1                 | Dome                     |              |  | 32-21<br>$\pm$ 3                                   | 90                       | 30                                | 2k                         | 8/6                                 | 33 x 10 x 14                            | Opt.,<br>Wood          | Opt.,<br>Cloth            | 80                 | 2185.00<br>Pair  |
|                       | Amethyst 10A            | Trans. Line                        | 9                        | 6,2 1/4                 | Cone,<br>Dome             | 1 3/4             | Domes                    |              |  | 24-23<br>$\pm$ 3                                   | 90                       | 60                                | 80,200,<br>2k,6.5k<br>Adj. | 8/6                                 | 51 x 15 x 25                            | Opt.,<br>Wood          | Opt.,<br>Cloth            | 240                | 9985.00<br>Pair  |
|                       | Topaz Subwoofer         | Trans. Line                        | 6                        |                         |                           |                   |                          |              |  | 28-300<br>$\pm$ 2                                  | 90                       | 50                                |                            | 8/6                                 | 33 x 10 x 14                            | Opt.,<br>Wood          | Opt.,<br>Cloth            | 90                 | 2185.00<br>Pair  |
|                       | Amethyst 12 Subwoofer   | Trans. Line                        | (2)11                    |                         |                           |                   |                          |              |  | 16-100<br>$\pm$ 1                                  | 90                       | 150                               | Adj.                       | 8/6                                 | 16 x 16 x 72                            | Opt.,<br>Wood          | Opt.,<br>Cloth            | 300                | 12,000.<br>Pair  |
| ESS<br>LABORATORY     | PS 820                  | Pas. Rad.                          | 6                        |                         |                           | 10 1/2<br>Sq. in. | Heil<br>AMT              | No           |  | 42-23<br>$\pm$ 1                                   | 89                       | 5                                 | 2k                         | 6/4                                 | 10 x 10 x 18                            | Black<br>Vinyl         | Black<br>Knit             | 54<br>Pair         | 305.00<br>Pair   |
|                       | PS 920                  | Pas. Rad.                          | 8                        |                         |                           | 10 1/2<br>Sq. in. | Heil<br>AMT              | T            |  | 38-23<br>$\pm$ 1                                   | 91                       | 5                                 | 2k                         | 6/4                                 | 12 x 11 x 22                            | Black<br>Vinyl         | Black<br>Knit             | 37                 | 369.00<br>Pair   |
|                       | PS 1020                 | Pas. Rad.                          | 10                       |                         |                           | 10 1/2<br>Sq. in. | Heil<br>AMT              | T            |  | 32-23<br>$\pm$ 1                                   | 92                       | 10                                | 1.6k                       | 6/4                                 | 14 x 13 x 25                            | Black<br>Vinyl         | Black<br>Knit             | 44<br>Pair         | 419.00<br>Pair   |
|                       | PS 1220                 | Pas. Rad.                          | 12                       | 4                       | Cone                      | 10 1/2<br>Sq. in. | Heil<br>AMT              | M,T          |  | 28-23<br>$\pm$ 1                                   | 93                       | 10                                | 380,2k                     | 6/4                                 | 14 x 12 x 34                            | Black<br>Vinyl         | Black<br>Knit             | 65                 | 489.00<br>Pair   |
|                       | AMT Monitor             | Pas. Rad.                          | 12                       |                         |                           | 21 1/2<br>Sq. in. | Heil<br>AMT              | M,ST         |  | 35-23<br>$\pm$ 3                                   | 91                       | 35                                | 800                        | 6/3                                 | 12 x 19 x 41                            | Black<br>Vinyl         | Black<br>Knit             | 114                | 1140.00<br>Pair  |
|                       | AMT 1D                  | Pas. Rad.                          | 10                       |                         |                           | 21 1/2<br>Sq. in. | Heil<br>AMT              | M,ST         |  | 35-23<br>$\pm$ 3                                   | 91                       | 35                                | 800                        | 6/3                                 | 16 x 16 x 35                            | Oiled<br>Wal.          | Black<br>Knit             | 85                 | 1039.00<br>Pair  |
|                       | AMT II                  | Pas. Rad.                          | 12                       |                         |                           | 21 1/2<br>Sq. in. | Heil<br>AMT              | ST           |  | 38-23<br>$\pm$ 3                                   | 91                       | 30                                | 900                        | 6/3                                 | 15 x 15 x 34                            | Oiled<br>Wal.          | Black<br>Knit             | 65                 | 899.00<br>Pair   |
|                       | 620 Mini Monitor        | Pas. Rad.                          | 5 1/4                    |                         |                           | 1 1/2<br>Sq. in.  | Heil<br>AMT<br>Dome      |              |  | 60-20<br>$\pm$ 5                                   | 86.5                     | 10                                | 2.5k                       | 8/3                                 | 8 x 7 x 12                              | Oiled<br>Wal.          | Black<br>Knit             | 18<br>Pair         | 159.00<br>Pair   |
| ETON                  | 100 DT8                 | Bass Ref.                          | 6 1/2                    |                         |                           | 1                 | Dome                     |              |  | 50-20<br>$\pm$ 2                                   | 88                       | 100                               | 2.8k                       | 8/3                                 | 9 x 13 x 33                             | Black<br>Lacq.         |                           | 45                 | Kit,<br>900.00<br>Pair                                   |
|                       | 200 DT8                 | Bass Ref.                          | 8                        |                         |                           | 1                 | Dome                     |              |  | 45-20<br>$\pm$ 2                                   | 89                       | 110                               | 2.1k                       | 8/3                                 | 11 x 15 x 37                            | Black<br>Lacq.         |                           | 55                 | Kit,<br>950.00<br>Pair                                   |
|                       | 300 DT8                 | Bass Ref.                          | 8                        | 4                       | Cone                      | 1                 | Dome                     |              |  | 40-20<br>$\pm$ 1                                   | 89                       | 150                               | 700,3k                     | 8/3                                 | 11 x 15 x 42                            | Black<br>Lacq.         |                           | 70                 | Kit,<br>1200.00<br>Pair                                  |
|                       | 500 DT8                 | Bass Ref.                          | (2)11                    | 4,7                     | Cones                     | 1                 | Dome                     |              |  | 30-22<br>$\pm$ 1                                   | 90                       | 200                               | 200,1.2k,<br>3.1k          | 8/3                                 | 18 x 26 x 58                            | Black<br>Lacq.         |                           | 100                | Kit,<br>2500.00<br>Pair                                  |
| EUROSTAT              | Mondrian                | Thiele-<br>Small                   | 9                        | 3                       | Dome                      | 3/4               | Dome                     |              |  | 38-32  | 88                       | 50                                | 600,3.8k                   | 8/6.3                               | 13 x 14 x 26                            | Black<br>Lacq.         | Black                     | 52                 | 3600.00<br>Pair  |
| FIDELIUS              | 903FL                   | Slot<br>Loaded<br>Port<br>Subwoof. | 9                        | 5                       | Cone                      | 1 1/4             | Dome                     | No           |  | 30-22<br>$\pm$ 3                                   | 88                       | 50                                | 250,6.5k                   | 8/6                                 | 13 x 14 x 48                            | Oiled<br>Oak           | Opt.                      | 80                 | 1795.00<br>Pair  |
|                       | Contra-Bass             |                                    | 12                       |                         |                           |                   |                          |              |  | 16-100<br>$\pm$ 3                                  | 90                       | 50                                | Ext.                       | 8/4                                 | 22 x 22 x 48                            | Oiled<br>Oak           | None                      | 175                | 1195.00  |
| FMS                   | Studio 2                | Aperiodic                          | 8                        |                         |                           | 1 1/8             | Dome                     |              |  | 40-25<br>$\pm$ 3                                   | 90                       | 25                                | 1.8k                       | 5/4                                 | 12 x 13 x 24                            | Opt.                   | Opt.                      | 70                 | 4800.00<br>Pair  |
| FOCUS                 | .5 Series II            | Tuned<br>Port                      | 8                        |                         |                           | 1                 | Dome                     |              |  | 45-20<br>$\pm$ 2                                   | 90                       | 30                                | 2.5k                       | 8/6.4                               | 12 x 12 x 19                            | Lacq.<br>Oak           | Black<br>Foam             | 55<br>Pair         | 650.00<br>Pair   |
|                       | .7 Series II            | Tuned<br>Port                      | 8                        |                         |                           | 1                 | Dome                     |              |  | 37-20<br>$\pm$ 2                                   | 90                       | 30                                | 2.5k                       | 8/6.4                               | 12 x 12 x 28                            | Lacq.<br>Oak           | Black<br>Foam             | 38                 | 880.00<br>Pair   |
|                       | High Definition Monitor | Tuned<br>Port                      | 8                        |                         |                           | 1 1/4             | Dome                     |              |  | 34-20<br>$\pm$ 2                                   | 87                       | 30                                | 2k                         | 8/6.4                               | 12 x 12 x 47                            | Lacq.<br>Oak           | Black<br>Foam             | 66                 | 1450.00<br>Pair  |
|                       | High Definition Tower   | Trans. Line                        | (2)8                     |                         |                           | 1 1/4             | Dome                     |              |  | 30-20<br>$\pm$ 2                                   | 92                       | 30                                | 1k                         | 4/3.2                               | 14 x 17 x 60                            | Lacq.<br>Oak           | Black<br>Foam             | 110                | 2950.00<br>Pair  |
| FOSGATE-<br>AUDIONICS | AS602                   | In-Wall                            | 6                        |                         |                           | 1                 | Dome                     |              |  | 75-22  | 87                       | 10                                | 3k                         | 8/6                                 | 12 x 9 x 4                              |                        | White                     | 16                 | 425.00<br>Pair   |
|                       | AS502                   | In-Wall                            | 5                        |                         |                           | 3/4               | Dome                     |              |  | 85-18  | 86                       | 10                                | 4k                         | 4/4                                 | 12 x 8 x 4                              |                        | White                     | 12                 | 299.00<br>Pair   |
|                       | AS802                   | In-Wall,<br>Sealed                 | 8                        |                         |                           | 1                 | Dome                     | T            |  | 45-22  | 87                       | 10                                | 2.5k                       | 8/6                                 | 24 x 16 x 4                             |                        |                           | 30                 | 999.00<br>Pair   |
|                       | DS802                   |                                    | 8                        |                         |                           | 1                 | Dome                     | T            |  | 45-22  | 87                       | 10                                | 2.5k                       | 8/6                                 | 19 x 11 x 12                            | Opt.                   | Black<br>Knit             | 25                 | 699.00<br>Pair   |
|                       | LF212                   | Subwoof.                           | 12                       |                         |                           |                   |                          |              |  |  |                          |                                   | 100                        | 8/4                                 | 18 x 20 x 18                            | Opt.                   | Black<br>Knit             | 45                 | 599.00   |
| FOSTEX                | RM900                   | Bass Ref.<br>Coaxial               | 8                        |                         |                           | 2                 | Planar                   | T            |  | 50-23  | 92                       | 25                                | 7k                         | 8/6                                 | 10 x 18 x 10                            | Black<br>Wal.          | Black<br>Knit             | 38<br>Pair         | 798.00<br>Pair   |
|                       | H1                      | Bass Ref.                          | 6 1/2                    |                         |                           | 1                 | Planar                   |              |  | 60-40<br>$\pm$ 5                                   | 89                       | 25                                | 6k                         | 8/6                                 | 8 x 17 x 8                              | Black<br>Wal.          | Black<br>Knit             | 28<br>Pair         | 299.00<br>Pair   |
|                       | H2                      | Bass Ref.                          | 8                        |                         |                           | 1                 | Planar                   |              |  | 50-40<br>$\pm$ 5                                   | 70                       | 25                                | 5k                         | 8/6                                 | 10 x 22 x 10                            | Black<br>Wal.          | Black<br>Knit             | 40<br>Pair         | 399.00<br>Pair   |
|                       | H3                      | Bass Ref.                          | (2)8                     |                         |                           | 1                 | Planar                   |              |  | 45-40<br>$\pm$ 5                                   | 73                       | 25                                | 4.5k                       | 4/3                                 | 11 x 32 x 11                            | Black<br>Wal.          | Black<br>Knit             | 70<br>Pair         | 499.00<br>Pair   |
|                       | SW112                   | Sat. &<br>Subwoof.<br>Coaxial      | 12                       | 4                       | Cone                      | 1                 | Dome                     |              |  | 40-40  | 95                       | 25                                | 250,4k                     | 8/5                                 | Three Pieces                            | Black<br>Wal.          | Black<br>Knit             | 50<br>Pair         | 599.00<br>Pair   |
|                       | RM800                   |                                    | 6 1/2                    |                         |                           |                   | Planar                   | T            |  | 55-25  | 89                       | 25                                | 7k                         | 8/6                                 | 9 x 15 x 9                              | Black<br>Matte<br>Wal. | Black<br>Knit             | Sys.<br>30<br>Pair | Sys.<br>599.00   |



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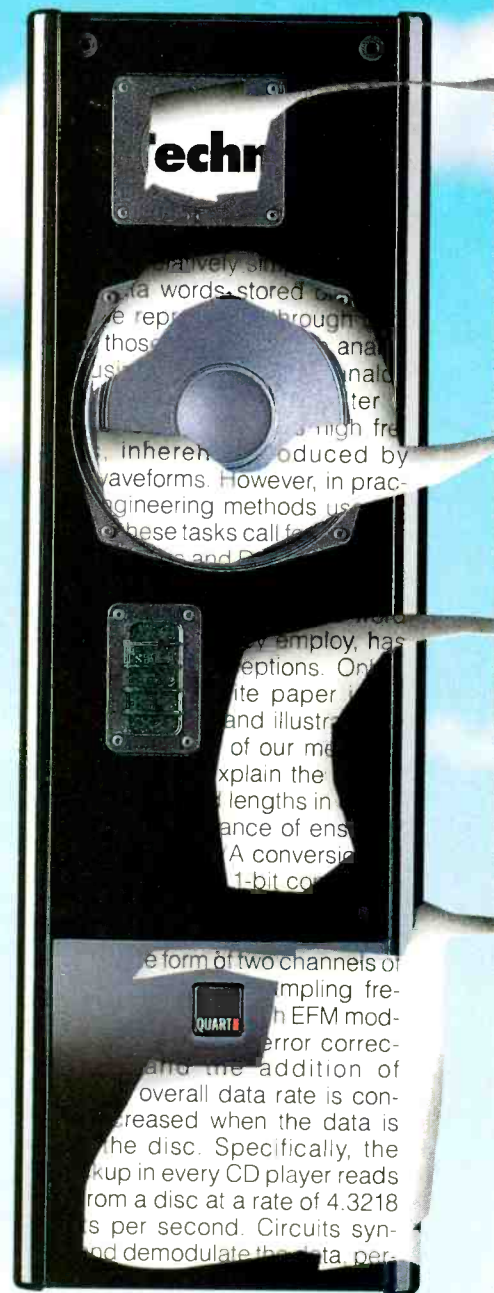


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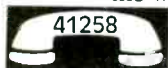
Perhaps it's the 5 octave range of Quart tweeters, or our sophisticated crossovers that insure only the ideal operational frequency range for each driver.

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So, in the spirit of fair play, we've deleted the portions of this Quart ad that are causing our competitors concern.

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## QUART

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# LOUDSPEAKERS

| MANUFACTURER         | Model           | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Super Tweeter = ST | Anticubic Frequency Response, Hz to kHz, ± dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish     | Grille Color and Material | Weight, Lbs. | Price, \$                    |
|----------------------|-----------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|--|---|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|------------|---------------------------|--------------|------------------------------|
| JVC (Continued)      | SX911           | Ac. Sus.                                   | 12                      | 4½                        | Cone          | 1                        | Dome         |  | 40-50   | 91                      | 500,4k                            | 6                         | 15 x 27 x 14                    | Wood Vinyl                           | Brown Knit | 63                        | 720.00       |                              |
| KEF                  | Reference 107   | Coupled Cavity                             | (2)10                   | 5                         | Cone          | 1                        | Dome         |  | 20-20 ± 2                                     | 90                      | 50                                | 160,2.5k                  | 4/4                             | 46 x 13 x 18                         | Opt., Wood | Black Knit                | 99           | 4800.00 Pair                 |
|                      | Reference 104/2 | Coupled Cavity                             | (2)8                    | (2)5                      | Cones         | 1                        | Dome         |  | 35-20 ± 2                                     | 92                      | 25                                | 160,2.5k                  | 4/4                             | 36 x 11 x 17                         | Opt., Wood | Black Knit                | 71           | 2200.00 Pair                 |
|                      | Reference 103/3 | Coupled Cavity                             | 8                       | 6½                        | Cone          | 1                        | Dome         |  | 50-20 ± 2                                     | 92                      | 50                                | 160,2.5k                  | 4/4                             | 23 x 10 x 13                         | Opt., Wood | Black Knit                | 38           | 1490.00 Pair                 |
|                      | Reference 102   | Closed Box                                 | 6½                      |                           |               | 1                        | Dome         |  | 65-20 ± 2                                     | 90                      | 50                                | 2.5k                      | 4/4                             | 13 x 8 x 10                          | Opt., Wood | Black Knit                | 15           | 890.00 Pair                  |
|                      | C95             | Coupled Cavity                             | 8                       | 8                         | Cone          | 1                        | Dome         |  | 50-20 ± 2                                     | 90                      | 20                                | 180,3k                    | 4/4                             | 34 x 10 x 13                         | Opt., Wood | Black Knit                | 42           | 1290.00 Pair                 |
|                      | C75             | Closed Box                                 | (2)8                    |                           |               | 1                        | Dome         |  | 57-20 ± 3                                     | 91                      | 20                                | 300,3k                    | 4/4                             | 28 x 10 x 10                         | Opt., Wood | Black Knit                | 29           | 750.00 Pair                  |
|                      | C55             | Pas. Rad.                                  | 8                       |                           |               | ¾                        | Dome         |  | 60-20 ± 3                                     | 90                      | 20                                | 3k                        | 4/4                             | 19 x 10 x 10                         | Opt., Wood | Black Knit                | 16           | 550.00 Pair                  |
|                      | C35             | Closed Box                                 | 8                       |                           |               | ¾                        | Dome         |  | 64-20 ± 3                                     | 88                      | 20                                | 3k                        | 4/4                             | 15 x 10 x 8                          | Opt., Wood | Black Knit                | 11           | 440.00 Pair                  |
|                      | C25             | Closed Box                                 | 6½                      |                           |               | ¾                        | Dome         |  | 65-20 ± 3                                     | 87                      | 20                                | 3k                        | 4/4                             | 13 x 8 x 7                           | Opt., Wood | Black Knit                | 9            | 330.00 Pair                  |
|                      | C15             | Closed Box                                 | 5                       |                           |               | ¾                        | Dome         |  | 68-20 ± 3                                     | 85                      | 20                                | 3k                        | 4/4                             | 10 x 7 x 6                           | Opt., Wood | Black Knit                | 7            | 240.00 Pair                  |
|                      | CR200F          | In-Wall or Ceiling Mount                   | 8                       |                           |               | 1                        | Dome         |  | 55-22 ± 2                                     | 90                      | 10                                | 2.5k                      | 4/                              | 13 x 10 x 4                          | White      | White Metal               | 5            | 450.00 Pair                  |
|                      | CR160S          | In-Wall or Ceiling Mount                   | 6½                      |                           |               | ¾                        | Dome         |  | 60-17 ± 2                                     | 88                      | 10                                | 3k                        | 4/                              | 9 x 9 x 4                            | White      | White Metal               | 4            | 400.00 Pair                  |
|                      | CR160R          | In-Wall or Ceiling Mount                   | 6½                      |                           |               | ¾                        | Dome         |  | 60-17 ± 2                                     | 88                      | 10                                | 3k                        | 4/                              | 9 Dia. x 4                           | White      | White Metal               | 4            | 400.00 Pair                  |
|                      | CR250SW         | In-Wall or Ceiling Mount Subwoof.          | 10                      |                           |               |                          |              |  | 32-150 ± 2                                    | 90                      | 10                                | 150                       | 4/                              | 13 x 13 x 4                          | White      | White Metal               | 8            | 550.00 Pair                  |
| KENWOOD              | LS-W9010        | Sat. & Subwoof.                            | (2)8                    | (2)4½                     | Cones         | 1                        | Dome         |  | 30-20   | 89                      | 25                                |                           | 8/                              | Three Pieces                         | Rswd.      | Black                     | 59½ Sys.     | 759.00 Sys.                  |
|                      | LS-W7010        | Sat. & Subwoof.                            | (2)6½                   | (2)4½                     | Cones         | 1                        | Dome         |  | 30-20   | 89                      | 25                                |                           | 8/                              | Three Pieces                         | Rswd.      | Black                     | 53 Sys.      | 699.00 Sys.                  |
|                      | LS-W5010        | Sat. & Subwoof.                            | (2)8                    | 4½                        | Cone          | 1                        | Dome         |  | 30-20   | 89                      | 25                                |                           | 8/                              | Three Pieces                         | Rswd.      | Black                     | 42 Sys.      | 499.00 Sys.                  |
|                      | LS-W3010        | Sat. & Subwoof.                            | (2)6½                   | 4½                        | Cone          | 1                        | Dome         |  | 30-20   | 89                      | 25                                |                           | 8/                              | Three Pieces                         | Rswd.      | Black                     | 35¼ Sys.     | 439.00 Sys.                  |
|                      | LS-P9100        | Pas. Rad.                                  | 10½                     | 4                         | Cone          | 2, 1¼                    | Dome, Leaf   |  | 20-48   | 91                      | 25                                |                           | 8/                              | 17 x 45 x 13                         | Rswd.      | Black                     | 62           | 350.00                       |
|                      | LS-P5100        | Pas. Rad.                                  | 8½                      | 4                         | Cone          | 2, 1¼                    | Dome, Leaf   |  | 25-48   | 90                      | 25                                |                           | 8/                              | 15 x 36 x 11                         | Rswd.      | Black                     | 40           | 235.00                       |
| KEVEK                | ES. 6           | Bass Ref.                                  | 6½                      |                           |               | ¾                        | Dome         |  | 60-20 ± 3                                     | 88                      | 10                                | 4k                        | 8/6                             | 20 x 12 x 8                          | Oak        | Black Knit                | 18           | 520.00 Pair                  |
|                      | ES. 8           | Inf. Baf.                                  | 8                       | 4                         | Cone          | ¾                        | Dome         |  | 50-20 ± 3                                     | 89                      | 20                                | 500,4k                    | 8/6                             | 38 x 16 x 10                         | Oak        | Black Knit                | 35           | 1050.00 Pair                 |
|                      | ES. 10          | Inf. Baf.                                  | 10                      | 6½                        | Cone          | ¾                        | Dome         |  | 40-20 ± 3                                     | 89                      | 20                                | 250,4k                    | 8/5                             | 42 x 20 x 11                         | Oak        | Black Knit                | 47           | 1350.00 Pair                 |
|                      | ES. 12          | Bass Ref.                                  | 12                      | 6½                        | Cone          | ¾                        | Dome         |  | 30-20 ± 3                                     | 90                      | 20                                | 250,4k                    | 8/5                             | 50 x 22 x 11                         | Oak        | Black Knit                | 70           | 1825.00 Pair                 |
| KINDEL AUDIO         | P-55            | Q.7 Box                                    | 6½                      |                           |               | 1                        | Dome         | No   | 50-22 ± 2                                     | 86                      | 20                                | 3k                        | 8/8                             | 14 x 8 x 8                           | Oak        | Black Cloth               | 17           | 299.00 Pair                  |
|                      | P-105           | Q.7 Box                                    | 8                       |                           |               | 1                        | Dome         | No   | 35-22 ± 2                                     | 88                      | 20                                | 3k                        | 4/4                             | 21 x 10 x 10                         | Oak        | Black Cloth               | 27           | 499.00 Pair                  |
|                      | Purist LT       | QB3, Pas. Rad.                             | (2)6½                   |                           |               | 1                        | Dome         | T  | 35-22 ± 2                                     | 89                      | 20                                | 300,2.5k                  | 4/4                             | 43 x 13 x 7                          | Oak        | Black Cloth               | 46           | 899.00 Pair                  |
|                      | MQLS-1          | Sat. & Slot Loaded Subwoof.                | (2)10                   | (4)6½                     | Cones         | 1                        | Dome         |  | 22-22 ± 2                                     | 90                      | 25                                | 90,450, 3k                | 4/4                             | Two Pieces Per Side                  | Oak        | Black Cloth               | 105 Side     | 1975.00 Pair                 |
|                      | MQLS-2          | Sat. & Slot Loaded Subwoof.                | (2)10                   | (2)4, 1½                  | Cones, Dome   | 2½x1½                    | Ribbon       |  | 22-26 ± 2                                     | 90                      | 35                                | 90,450, 1.5k, 11k         | 4/4                             | Two Pieces Per Side                  | Oak        | Black Cloth               | 111 Side     | 2550.00 Pair                 |
| KINERGETICS RESEARCH | SW-100          | Powered Stereo Subwoof.                    | (2)10                   |                           |               |                          |              | W  | 20-100 ± 3                                    | 94                      | Inc.                              | 100                       | 4/3                             | 24 x 11 x 16                         | Opt.       | Black Cloth               | 50           | 1532.00 Pair w/ Amps & Xover |
|                      | SW-100.5        | Powered Stereo Subwoof.                    | 10                      |                           |               |                          |              | W  | 20-100 ± 3                                    | 91                      | Inc.                              | 100                       | 8/6                             | 12 x 11 x 16                         | Opt.       |                           |              | 1094.00 Pair w/ Amps & Xover |
|                      | SW-400          | Powered Stereo Subwoof.                    | (5)10                   |                           |               |                          |              | W  | 20-100 ± 3                                    | 100                     | Inc.                              | 100                       | 3/2                             | 64 x 11 x 16                         | Opt.       | Black Cloth               | 120          | 3895.00 Pair w/ Amps & Xover |
| KINETIC AUDIO        | Titan           | TATL (Tap. Ac. Trap. Line)                 | (2)12                   | 6½                        | Cone          | 2, 1¾                    | Domes        | (2)M, T, ST  | 12-22 ± 1.5                                   | 90                      | 35                                | 60,90,350, 3k, 7k         | 6/3                             | 18 x 22 x 60                         | Oiled Wal. | Black Knit                | 245          | 5000.00 Pair                 |
|                      | Trapezium       | TATL                                       | 12                      | 6½                        | Cone          | 2, 1¾                    | Domes        | (2)M, T, ST  | 12-22 ± 1                                     | 89                      | 45                                | 90,350, 3.5k, 7k          | 8/5                             | 16 x 20 x 60                         | Oiled Wal. | Black Knit                | 205          | 4000.00 Pair                 |
|                      | Labyrinth       | TATL                                       | 12                      | 6½                        | Cone          | 2, 1                     | Domes        | (2)M, T  | 16-22 ± 1.5                                   | 91                      | 35                                | 90,350, 3.5k              | 8/5                             | 16 x 18 x 48                         | Oiled Wal. | Black Knit                | 185          | 3000.00 Pair                 |
| (Continued)          |                 |  |                         |                           |               |                          |              |  |   |                         |                                   |                           |                                 |                                      |            |                           |              |                              |



# LOUDSPEAKERS

| MANUFACTURER   | Model                   | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Superwoofer = ST | Anchoctic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$                       |
|----------------|-------------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|--|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------|---------------------------|--------------|---------------------------------|
| FRIED PRODUCTS | R/4                     | Trans. Line & Line Tun. Dual Trans. Line   | 10                      | 5                         | Cone          | 1                        | Dome         | T  | 38-18 $\pm$ 3                                     | 90                      | 25                                | 250,3k                    | 8/5                              | 32 x 12 x 13                         | Wal.        | Black Cloth               | 35           | 1095.00 Pair                    |
|                | D/2                     | Trans. Line                                | 8                       | 6                         | Cone          | 3/4                      | Dome         | T  | 28-20 $\pm$ 3                                     | 90                      | 25                                | 99,2.7k                   | 8/6.3                            | 49 x 11 x 16                         | Wal.        | Black Foam                | 100          | 4000.00 Pair; Kit, 1100.00 Pair |
|                | C/3L                    | Trans. Line                                | 6 1/2                   |                           |               | 3/4                      | Dome         |  | 50-22 $\pm$ 3                                     | 91                      | 20                                | 2.7k                      | 8/6.3                            | 11 x 14 x 15                         | Opt.        | Black Foam                | 35           | 1450.00 Pair; Kit, 450.00 Pair  |
|                | G/3                     | Trans. Line                                | 10                      | 6 1/2                     | Cone          | 3/4                      | Dome         |  | 23-22 $\pm$ 3                                     | 91                      | 20                                | 99,2.7k                   | 8/6.3                            | 18 x 16 x 44                         | Wal.        | Black Foam                | 100          | 2500.00 Pair                    |
|                | Beta                    | Pressure Release Line Tun.                 | 6 1/2                   |                           |               | 2 1/2                    | Cone/Dome    |  | 60-20 $\pm$ 3                                     | 87                      | 20                                | 2k                        | 8/6                              | 8 x 8 x 14                           | Opt., Vinyl | Black Knit                | 30           | 325.00 Pair                     |
|                | Q/3                     | Line Tun.                                  | 8                       |                           |               | 1                        | Dome         | T  | 45-18 $\pm$ 3                                     | 89                      | 20                                | 2k                        | 8/6                              | 11 x 9 x 20                          | Opt., Vinyl | Black Knit                | 40           | 440.00 Pair                     |
|                | A/3                     | Line Tun.                                  | 8                       |                           |               | 1                        | Dome         | T  | 40-18 $\pm$ 3                                     | 90                      | 20                                | 2k                        | 8/6                              | 13 x 10 x 23                         | Oiled Wal.  | Black Knit                | 35           | 650.00 Pair                     |
|                | The Subwoofer Studio IV | Line Tun. Subwoof. Line Tun.               | 10                      |                           |               |                          |              |  | 32-90 $\pm$ 3                                     | 89                      | 20                                | 90                        | 8/6                              | 15 x 12 x 24                         | Opt., Vinyl | Black Knit                | 55           | 330.00 Pair                     |
|                |                         |  | 8                       |                           |               | 3/4                      | Dome         |  | 26-22 $\pm$ 3                                     | 90                      | 20                                | 2.7k                      | 8/6                              | 12 x 18 x 39                         | Oiled Wal.  | Black Foam                | 80           | 1400.00 Pair                    |
| FUSELIER       | 4.3i                    | Vented                                     | (2)8                    | 5 1/4                     | Cone          | 1                        | Dome         | No   | 34-20 $\pm$ 2                                     | 90                      | 30                                | 200,3k                    | 4/2                              | Three Pieces per Side                | Wal.        | Black                     |              | 3200.00 Pair                    |
|                | 2.5                     | Vented                                     | 5 1/4                   |                           |               | 1                        | Dome         |  | 50-20 $\pm$ 2                                     | 88                      | 10                                | 300,2.2k                  | 4/4                              | 8 x 11 x 14                          | Wal.        | Black                     | 16           | 775.00 Pair                     |
|                | 2.6                     | Vented                                     | 6 1/2                   |                           |               | 1 1/8                    | Dome         |  | 47-20 $\pm$ 2                                     | 87                      | 20                                | 1.7k                      | 8/5                              | 9 x 13 x 14                          | Wal.        | Black                     | 21           | 995.00 Pair                     |
|                | 3.8                     | Vented                                     | 8                       | 2                         | Dome          | 1                        | Dome         |  | 40-20 $\pm$ 2                                     | 89                      | 20                                | 800,6.5k                  | 8/3.2                            | 11 x 16 x 21                         | Wal.        | Black                     | 33           | 1595.00 Pair                    |
|                | 3.8D                    | Vented                                     | 8                       | 2                         | Dome          | 1                        | Dome         |  | 35-20 $\pm$ 2                                     | 88                      | 20                                | 800,6.5k                  | 8/3.2                            | 11 x 18 x 24                         | Wal.        | Black                     | 39           | 2100.00 Pair                    |
| GLENMONITOR    | Cubits                  | Ac. Sus.                                   | 8                       |                           |               | 1                        | Dome         |  | 45-21 $\pm$ 3                                     | 91                      | 10                                | 2.5k                      | 6/                               | 10 x 10 x 10                         | Opt.        | Black Knit                | 45           | 350.00 Pair                     |
|                | Blockheads              | Ac. Sus.                                   | 6 1/2                   |                           |               | 1                        | Dome         |  | 55-21 $\pm$ 5                                     | 91                      | 10                                | 2.5k                      | 6/                               | 8 x 8 x 8                            | Opt.        | Black Knit                | 40           | 275.00 Pair                     |
|                | Bass-Block              | Subwoof.                                   | 12                      |                           |               |                          |              |  | 20-150  | 93                      | 25                                | 150                       | 4/                               | 16 x 16 x 16                         | Opt.        | Black Knit                | 50           | 350.00 Pair                     |
|                | LOWBE                   | Subwoof.                                   | 15                      |                           |               |                          |              |  | 18-90   | 92                      | 50                                | 90                        | 4/                               | 20 x 20 x 20                         | Opt.        | Black Knit                | 60           | 650.00 Pair                     |
|                | Midbits                 | Inf. Baf.                                  | 10                      | 5                         | Cone          | 1                        | Dome         |  | 35-21   | 94                      | 25                                | 750,3.8k                  | 4/                               | 12 x 12 x 24                         | Opt.        | Black Knit                | 45           | 650.00 Pair                     |
|                | Double Eights           | Inf. Baf.                                  | 10,8                    | 5                         | Cone          | 1                        | Dome         |  | 25-21   | 94                      | 25                                | 750,3.8k                  | 4/                               | 12 x 12 x 32                         | Opt.        | Black Knit                | 50           | 850.00 Pair                     |
| GOLD AERO      | 803s                    | Slot Loaded                                | 8                       | 4                         | Cone          | 1                        | Dome         | No   | 25-24 $\pm$ 3                                     | 87                      | 75                                |                           | 8/                               | 41 x 14 x 13                         | Black Lacq. | Black Knit                | 75           | 2500.00 Pair                    |
|                | 1201S/Trapagon          | Slot Loaded                                | 12                      | 4                         | Dome          | 1                        | Dome         | No   | 20-30 $\pm$ 2                                     | 90                      | 100                               |                           | 8/                               | Two Pieces Per Side                  | Black Lacq. | Black None                | 100 Side     | 7200.00 Sys.                    |
| GOLDMUND       | Prologue                | Pas. Rad.                                  | 5                       |                           |               | 3/4                      | Dome         |  |   | 89                      |                                   |                           | 4/                               | 9 x 9 x 14                           | Black Matte | Black Knit                | 15           | 2550.00 Pair                    |
|                | Dialogue                | Tuned Port                                 | 7                       | 7                         | Cone          | 1                        | Inv. Dome    |  |   | 96                      |                                   |                           | 4/                               | 14 x 14 x 47                         | Black Lacq. | Black Knit                | 150          | 5690.00 Pair                    |
|                | Analogue                | Tuned Port                                 | 13                      | 8                         | Cone          | (2)1                     | Domes        |  |   | 95                      |                                   |                           | 4/                               | 26 x 65 x 65                         | Black Lacq. | Black Knit                | 330          | 24,900.00 Pair                  |
|                | Apologue                | Inf. Baf.                                  | (2)12                   | 8                         | Cone          | (2)1                     | Domes        |  |   | 100                     |                                   |                           | 4/                               | 34 x 46 x 74                         | Black Lacq. | Black Knit                | 700          | 49,900.00 Pair                  |
| GOLD SOUND     | #6                      | Sealed                                     | (2)8                    | (2)5 1/4                  | Cones         | 1                        | Dome         |  | 32-30 $\pm$ 2                                     | 93                      | 5                                 | 60,200,3k                 | 4/                               | 37 x 14 x 11                         | Opt.        | Brown Knit                | 122          | Kit, 849.00 Pair                |
|                | #9                      | Vented                                     | (2)15                   | 7                         | Cone          | 3x7                      | Horn         | M  | 26-30 $\pm$ 3                                     | 98                      | 5                                 | 60,250,3k                 | 4/                               | 46 x 29 x 19                         | Opt.        | Brown Knit                | 272          | Kit, 899.00 Pair                |
|                | #10                     | Vented                                     | 15                      | 7                         | Cone          | 1                        |              | M,T  | 28-21 $\pm$ 3                                     | 93                      | 5                                 | 300,5k                    | 8/                               | 44 x 18 x 17                         | Opt.        | Brown Knit                | 210          | Kit, 1419.00 Pair               |
|                | 2018                    | Vented                                     | 18                      | 8                         | Cone          |                          |              | M,T  | 28-21 $\pm$ 3                                     | 95                      | 5                                 | 400,1.4k, 5k              | 8/                               | 46 x 29 x 19                         | Opt.        | Brown Knit                | 360          | Kit, 1776.00 Pair               |
|                | #14                     | Vented                                     | 18                      | 10,8                      | Cone, Horn    | 5                        | Horn         | M,T  | 28-21 $\pm$ 3                                     | 95                      | 5                                 | 200,1.2k, 5k              | 8/                               | 46 x 29 x 19                         | Opt.        | Brown Knit                | 392          | Kit, 2499.00 Pair               |
|                | Kit #.2                 | Sealed                                     | 5 1/4                   |                           |               | 3/4                      | Dome         |  | 68-20 $\pm$ 3                                     | 91                      | 5                                 | 3k                        | 4/8                              | 12 x 8 x 7                           | Opt.        | Brown Knit                | 18           | Kit, 149.00 Pair                |
|                | Kit #.6                 | Sealed                                     | 6 1/2                   |                           |               | 1                        | Dome         | T  | 58-20 $\pm$ 3                                     | 92                      | 5                                 | 3k                        | 4/                               | 16 x 10 x 8                          | Opt.        | Opt.                      | 24           | Kit, 198.00 Pair                |
|                | Kit #1                  | Vented                                     | 10                      |                           |               | 1 1/4                    | Dome         | T  | 45-20 $\pm$ 3                                     | 93                      | 5                                 | 2k                        | 4/8                              | 25 x 14 x 11                         | Opt.        | Opt.                      | 58           | Kit, 359.00 Pair                |
|                | Kit #2                  | Vented                                     | 8                       | 4                         | Cone          | 1                        | Dome         |  | 45-30 $\pm$ 3                                     | 91                      | 5                                 | 90,300,4k                 | 4/                               | 19 x 12 x 10                         | Opt.        | Opt.                      | 36           | Kit, 349.00 Pair                |
|                | Kit #3                  | Vented                                     | 12                      | 5 1/4                     | Cone          | 1                        | Dome         |  | 38-30 $\pm$ 3                                     | 92                      | 5                                 | 80,200,3k                 | 4/                               | 25 x 14 x 11                         | Opt.        | Opt.                      | 69           | Kit, 499.00 Pair                |
| (Continued)    |                         |  |                         |                           |               |                          |              |  |   |                         |                                   |                           |                                  |                                      |             |                           |              |                                 |



# LOUDSPEAKERS

| MANUFACTURER              | Model   | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type    | Separate Low Crossover? Woofer = W, Midrange = M, Tweeter = T, Superwoofer = ST | Acoustic Frequency Response, Hz to kHz, ±dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To nearest inch) | Finish | Grille Color and Material | Weight, Lbs. | Price, \$                                 |
|---------------------------|---|--|-------------------------|---------------------------|---------------|--------------------------|-----------------|---|---|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|--------|---------------------------|--------------|---|
| GOLD SOUND<br>(Continued) | Kit #4  | Vented                                     | 12                      | 6                         | Cone          | 1 1/4, 1/2               | Domes           |   | 36-30<br>±3                                 | 93                      | 5                                 | 70,250,<br>3k,8k          | 4/                              | 37 x 14 x 11                         | Opt.   | Opt.                      | 128<br>Pair  | Kit,<br>749.00<br>Pair                    |
|                           | Kit #5  | Vented                                     | 15                      | 7                         | Cone          | 3x7                      | Horn            | M   | 28-30<br>±3                                 | 95                      | 5                                 | 60,250,3k                 | 4/                              | 44 x 18 x 14                         | Opt.   | Opt.                      | 158<br>Pair  | Kit,<br>989.00<br>Pair                    |
|                           | Kit #7  | Vented                                     | (2)12                   | 7                         | Cone          | 1 1/4,<br>2x3            | Dome,<br>Ribbon | M,T   | 28-35<br>±3                                 | 95                      | 5                                 | 50,300,<br>3k,8k          | 4/8                             | 44 x 18 x 14                         | Opt.   | Opt.                      | 232<br>Pair  | Kit,<br>1289.00<br>Pair                   |
|                           | Kit #8  | Vented                                     | (2)12                   | (2)6                      | Cones         | 1                        | Dome            |   | 26-25<br>±3                                 | 95                      | 5                                 | 200,4k                    | 4/8                             | 44 x 18 x 14                         | Opt.   | Opt.                      |              | Kit,<br>1489.00<br>Pair                   |
|                           | Kit #11   | Vented                                     | 15                      | 7                         | Cone          | 5x5                      | Horn            | M,T   | 28-21<br>±3                                 | 93                      | 5                                 | 300,5k                    | 8/                              | 44 x 18 x 14                         | Opt.   | Opt.                      | 218<br>Pair  | Kit,<br>1619.00<br>Pair                   |
|                           | Kit 2005  | Vented                                     | 15                      | 8,4                       | Cones         | 1                        | Dome            | M,T   | 28-27<br>±3                                 | 96                      | 5                                 | 400,1.4k,<br>5k           | 8/                              | 44 x 18 x 14                         | Opt.   | Opt.                      | 245<br>Pair  | Kit,<br>1919.00<br>Pair                   |
|                           | Performance<br>Pro 12 Kit                                 | Sealed                                     | 12                      |                           |               | 3x7                      | Horn            | T   | 55-21<br>±3                                 | 100                     | 5                                 | 3k                        | 8/                              | 20 x 16 x 15                         | Opt.   | Black<br>Metal            | 59<br>Pair   | Kit,<br>269.00<br>Pair                    |
|                           | Performance<br>Pro 15 Kit                                 | Vented                                     | 15                      | 7                         | Cone          | 4x10,<br>3x7             | Horns           | M,T   | 39-21<br>±3                                 | 98                      | 5                                 | 400,5k                    | 8/                              | 44 x 18 x 14                         | Opt.   | Black<br>Metal            | 74<br>Pair   | Kit,<br>1188.00<br>Pair                   |
|                           | Performance<br>Pro Double<br>15 Kit                       | Vented                                     | (2)15                   | 7                         | Cone          | 4x10,<br>3x7             | Horns           | M,T   | 38-21<br>±3                                 | 100                     | 5                                 | 400,5k                    | 4/                              | 46 x 24 x 21                         | Opt.   | Black<br>Metal            | 129<br>Pair  | Kit,<br>1298.00<br>Pair                   |
|                           | Performance<br>Pro Double<br>18 Kit                       | Vented                                     | (2)18                   | (2)10                     | Cones         | 7x17,<br>4               | Horns           | M,T   | 29-21<br>±3                                 | 101                     | 5                                 | 200,2k,<br>10k            | 4/                              | Two Pieces<br>Per Side               | Opt.   | Black<br>Metal            | 280<br>Side  | Kit,<br>3698.00<br>Pair                   |
|                           | GS12 Kit  | Subwoof.                                   | 12                      |                           |               |                          |                 |   | 32-150<br>±3                                | 92                      | 5                                 | 150                       | 4,8                             | 18 x 18 x 16                         | Opt.   | Opt.                      | 18           | Kit,<br>308.00<br>w/Xover<br>Kit,         |
|                           | GS12(2) Kit   | Compd.<br>Load<br>Subwoof.                 | (2)12                   |                           |               |                          |                 |   | 25-150<br>±3                                | 95                      | 5                                 | 150                       | 4,8                             | 18 x 18 x 16                         | Opt.   | Opt.                      | 36<br>Pair   | Kit,<br>449.00<br>Pair<br>w/Xover<br>Kit, |
|                           | GS15 Kit  | Subwoof.                                   | 15                      |                           |               |                          |                 |   | 32-150<br>±3                                | 94                      | 5                                 | 150                       | 4,8                             | 44 x 18 x 14                         | Opt.   | Opt.                      | 20           | Kit,<br>498.00<br>w/Xover<br>Kit,         |
|                           | GS15(2) Kit   | Compd.<br>Load<br>Subwoof.                 | (2)15                   |                           |               |                          |                 |   | 24-150<br>±3                                | 97                      | 5                                 | 150                       | 4,8                             | 44 x 18 x 14                         | Opt.   | Opt.                      | 40           | Kit,<br>678.00<br>Pair<br>w/Xover<br>Kit, |
|                           | JBL15 Kit   | Subwoof.                                   | 15                      |                           |               |                          |                 |   | 28-150<br>±3                                | 96                      | 5                                 | 150                       | 8/                              | 44 x 18 x 14                         | Opt.   | Opt.                      | 25           | Kit,<br>618.00<br>Kit,                    |
|                           | JBL15(2) Kit  | Compd.<br>Load<br>Subwoof.                 | (2)15                   |                           |               |                          |                 |   | 23-150<br>±3                                | 99                      | 5                                 | 150                       | 8/                              | 44 x 18 x 14                         | Opt.   | Opt.                      | 50           | Kit,<br>998.00<br>Pair                    |
|                           | JBL18 Kit   | Subwoof.                                   | 18                      |                           |               |                          |                 |   | 28-150<br>±3                                | 95                      | 5                                 | 150                       | 8/                              |                                      | Opt.   | Opt.                      | 33           | Kit,<br>788.00<br>Pair                    |
|                           | JBL18(2) Kit  | Compd.<br>Load<br>Subwoof.                 | (2)18                   |                           |               |                          |                 |   | 23-150<br>±3                                | 98                      | 5                                 | 150                       | 8/                              |                                      | Opt.   | Opt.                      | 66           | Kit,<br>1478.00<br>Pair                   |
|                           | 8C  | In-Wall                                    | 8                       |                           |               | 1 1/4                    | Dome            |   | 40-25<br>±3                                 | 92                      | 5                                 | 4k                        | 4/8                             |                                      | Opt.   | Opt.                      | 10           | Pair<br>99.00                             |
|                           | 8AC   | In-Wall                                    | 8                       |                           |               | 2                        | Cone            |   | 32-20<br>±3                                 | 92                      | 5                                 | 3k                        | 4/8                             |                                      | Opt.   | Opt.                      | 18           | 134.00                                    |
|                           | 824   | In-Wall<br>Subwoof.                        | 8                       |                           |               |                          |                 |   | 32-2<br>±3                                  | 92                      | 5                                 |                           | 4/8                             |                                      | Opt.   | Opt.                      | 16           | 99.00                                     |
|                           | 844   | In-Wall<br>Subwoof.                        | 8                       |                           |               |                          |                 |   | 30-2<br>±3                                  | 92                      | 5                                 |                           | 4/8                             |                                      | Opt.   | Opt.                      | 24           | 139.00                                    |
| GOODMANS                  | The Maxim   | Bass Ref.                                  | 5                       |                           |               | 3/4                      | Dome            |   | 65-20                                       | 86                      | 15                                |                           | 8/                              | 10 x 7 x 7                           | Black  | Black<br>Knit             | 18<br>Pair   | 245.00<br>Pair                            |
|                           | The Maxamp  | Powered<br>Bass Ref.                       | 5                       |                           |               | 3/4                      | Dome            |   | 65-20                                       | 86                      | Inc                               |                           | 8/                              | 10 x 7 x 7                           | Black  | Black<br>Knit             | 18<br>Pair   | 325.00<br>Pair                            |
|                           | The Maxamp<br>Remote<br>(With remote<br>control)<br>B-Max | Powered<br>Bass Ref.                       | 5                       |                           |               | 3/4                      | Dome            |   | 65-20                                       | 86                      | Inc                               |                           | 8/                              | 10 x 7 x 7                           | Black  | Black<br>Knit             | 18<br>Pair   | 475.00<br>Pair                            |
|                           |   | Subwoof.                                   | (2)6                    |                           |               |                          |                 |   | 30-150                                      | 90                      | (2)<br>100                        | 150                       | 8/2                             | 24 x 8 x 9                           | Black  | Black<br>Knit             | 22           | 225.00                                    |
|                           | M1  | Bass Ref.                                  | 5                       |                           |               | 3/4                      | Dome            |   |   | 84                      | 20                                |                           | 8/6                             | 10 x 8 x 7                           | Black  | Black<br>Knit             | 18<br>Pair   | 179.00                                    |
|                           | M3  | Bass Ref.                                  | 6 1/2                   |                           |               | 3/4                      | Dome            |   |   | 88                      | 20                                |                           | 8/6                             | 15 x 9 x 7                           | Black  | Black<br>Knit             | 22<br>Pair   | 239.00                                    |
|                           | M5  | Bass Ref.                                  | 8                       |                           |               | 3/4                      | Dome            |   |   | 88                      | 20                                |                           | 8/6                             | 16 x 10 x 8                          | Black  | Black<br>Knit             | 28<br>Pair   | 299.00                                    |
|                           | H.I.M. 110  | Bass Ref.                                  | 8                       |                           |               | 1                        | Dome            | T   | 45-20                                       | 98                      | 10                                | 4k                        | 8/4                             | 20 x 10 x 12                         | Black  | Black<br>Knit             | 24           | 479.00                                    |
|                           | H.I.M. 220  | Bass Ref.                                  | 10                      |                           |               |                          | Dome            | T   | 40-20                                       | 98                      | 10                                | 4k                        | 8/4                             | 30 x 13 x 16                         | Black  | Black<br>Knit             | 44           | 579.00                                    |
|                           | H.I.M. 440  | Bass Ref.                                  | 12                      | 4                         |               | 1                        |                 | M,T   | 30-20                                       | 98                      | 10                                | 1k,4k                     | 8/4                             | 35 x 15 x 17                         | Black  | Black<br>Knit             | 66           | 799.00                                    |
|                           | H.I.M. 880  | Bass Ref.                                  | 15                      | 8                         |               | 1                        | Dome            | W,M   | 30-20                                       | 100                     | 10                                | 500,4k                    | 8/4                             | 40 x 18 x 17                         | Black  | Black<br>Knit             | 88           | 1199.00<br>Pair                           |
|                           |   |  |                         |                           |               |                          |                 |   |   |                         |                                   |                           |                                 |                                      |        |                           |              |   |
| GOTT LABS                 | Studio  | Ac. Sus.                                   | 5                       |                           |               | 1                        | Dome            | T   | 85-20<br>±3                                 | 87                      | 20                                | 2.7k                      | 8/5                             | 8 x 6 x 10                           | Wal.   | Brown<br>Cloth            | 15           | 158.00                                    |



# LOUDSPEAKERS

| MANUFACTURER     | Model                                     | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type  | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Subwoofer = ST | Frequency Response, Hz to kHz, ±dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish         | Grille Color and Material | Weight, Lbs. | Price, \$    |
|------------------|---|--|-------------------------|---------------------------|---------------|--------------------------|---------------|--|------------------------------------|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|----------------|---------------------------|--------------|--------------|
| REUBEN GUSS      | Custom Monitor System 1                   | Sat. & Inf. Baf.                           | (24)15                  | (48)5                     | Domes         | (32)1, (100)3            | Domes, Piezos | M, T   | 10-30 ±3                           | 98                      | 100                               | 475,650, 950,3.5k         | 4/3                             | Eight Pieces                         | Opt.           | Black Knit                | 2200 Sys.    | 100,000 Sys. |
|                  | Monitor System 2                          | Sat. & Inf. Baf.                           | (12)15                  | (24)5                     | Domes         | (16)1, (50)3             | Domes, Piezos | M, T   | 15-30 ±3                           | 98                      | 50                                | 475,650, 950,3.5k         | 8/6                             | Four Pieces                          | Opt.           | Black Knit                | 1100 Sys.    | 50,000 Sys.  |
|                  | Symphony System 3                         | Sat. & Inf. Baf.                           | (4)15                   | (6)5                      | Domes         | (4)1, (12)3              | Domes, Piezos | M, T   | 20-30 ±3                           | 96                      | 50                                | 475,650, 950,3.5k         | 4/3                             | Four Pieces                          | Oiled Wal.     | Black Knit                | 355 Sys.     | 15,000 Sys.  |
|                  | Concerto System 4                         | Sat. & Inf. Baf.                           | (4)12                   | (6)5                      | Domes         | (4)1, (8)3               | Domes, Piezos | M, T   | 30-30 ±3                           | 92                      | 50                                | 475,650, 950,3.5k         | 4/3                             | Four Pieces                          | Oiled Wal.     | Black Knit                | 350 Sys.     | 9000.00 Sys. |
|                  | Sonata                                    | Sat. & Inf. Baf.                           | (2)12                   | (2)5                      | Domes         | (2)1, (6)3               | Domes, Piezos | M, T   | 30-30 ±4                           | 88                      | 50                                | 600,3.5k                  | 8/6                             | Four Pieces                          | Oiled Wal.     | Black Knit                | 140 Sys.     | 4000.00 Sys. |
| HAFLER           | 200                                       | Bass Ref.                                  | 6½                      |                           | Cone          | 1                        | Dome          |  | 50-20                              | 88                      | 20                                | 3k                        | 4/4                             | 8 x 10 x 14                          | Oak Ven.       | Black Knit                | 40 Pair      | 450.00 Pair  |
|                  | 300                                       | Tuned Trans. Line                          | (2)6½                   |                           |               | 1                        | Dome          |  | 35-20                              | 91                      | 20                                | 2.5k                      | 8/6                             | 9 x 11 x 36                          | Oiled Oak      | Black Knit                | 45           | 795.00 Pair  |
|                  | 400                                       | Tuned Trans. Line                          | 8                       | (2)6½                     | Cones         | 1                        | Dome          |  | 30-20                              | 92                      | 20                                | 100,2.5k                  | 8/6                             | 10 x 12 x 41                         | Oiled Oak Ven. | Black Knit                | 60           | 1100.00 Pair |
| HALES AUDIO      | System Two                                | Ac. Sus.                                   | (2)7                    |                           |               | 1                        | Inv. Dome     |  | 45-20 ±3                           | 88                      | 50                                | 1.8k                      | 4/3                             | 11 x 13 x 36                         | Opt.           | Black Foam                | 68           | 2395.00 Pair |
|                  | System Two Signature System One Reference | Ac. Sus.                                   | (2)8                    |                           |               | 1                        | Dome          |  | 43-26 ±3                           | 89                      | 50                                | 2k                        | 4/3                             | 11 x 21 x 48                         | Opt.           | Black Foam                | 210          | 3800.00 Pair |
| HARMS LABS       | Mini                                      | Inf. Baf.                                  | 5¼                      |                           |               | 1                        | Dome          |  | 70-20 ±2                           | 87                      | 10                                | 3k                        | 8/7                             | 13 x 9 x 6                           | Wal. Stain     | Black Knit                | 24 Pair      | 280.00 Pair  |
|                  | HL1                                       | Pas. Rad.                                  | 5¼                      |                           |               | 1                        | Dome          |  | 45-20 ±2                           | 87                      | 10                                | 3k                        | 8/7                             | 20 x 10 x 9                          | Wal. Stain     | Black Knit                | 36 Pair      | 380.00 Pair  |
|                  | HL1P                                      | Pas. Rad.                                  | 6½                      |                           |               | 1                        | Dome          |  | 37-20 ±2                           | 90                      | 10                                | 3k                        | 8/7                             | 22 x 10 x 10                         | Wal. Stain     | Black Knit                | 44 Pair      | 480.00 Pair  |
|                  | HL2                                       | Pas. Rad.                                  | 8                       |                           |               | 1                        | Dome          |  | 30-20 ±2                           | 91                      | 10                                | 3k                        | 8/7                             | 24 x 14 x 10                         | Wal. Stain     | Black Knit                | 70 Pair      | 580.00 Pair  |
|                  | HL3                                       | Pas. Rad.                                  | 10                      | 6½                        | Cone          | 1                        | Dome          |  | 26-20 ±2                           | 90                      | 10                                | 300,3k                    | 8/7                             | 34 x 12 x 13                         | Wal. Stain     | Black Knit                | 100 Pair     | 780.00 Pair  |
|                  | HL4                                       | Sat. & Pas. Rad. Subwoof.                  | 12                      | (2)6½                     | Cones         | (2)1                     | Domes         |  | 22-20 ±2                           | 94                      | 10                                | 200,3k                    | 8/4                             | Four Pieces                          | Wal. Stain     | Black Knit                | 164 Sys.     | 1200.00 Sys. |
|                  | HL5                                       | Sat. & Pas. Rad. Subwoof.                  | (2)12                   | (4)5¼                     | Cones         | (4)1                     | Domes         |  | 18-20 ±2                           | 97                      | 10                                | 150,3k                    | 8/4                             | Six Pieces                           | Wal. Stain     | Black Knit                | 230 Sys.     | 3000.00 Sys. |
|                  | Small Subwoofer                           | Pas. Rad. Subwoof.                         | 10                      |                           |               |                          |               |  | To 150 ±3                          | 91                      | 30                                | 125                       | 4/4                             | 25 x 14 x 10                         | Wal. Stain     | Black Knit                | 38           | 249.00       |
| HARTLEY PRODUCTS | Reference Mini-Tower SW-10                | Air Col. Subwoof.                          | (2)6½                   |                           |               | 1                        | Dome          | No   | 32-25 ±3                           | 93                      | 5                                 | 3.1k                      | 5/4                             | 33 x 12 x 12                         | Oiled Oak      | Black Knit                | 50           | 660.00 Pair  |
|                  | Concertmaster                             | Inf. Baf.                                  | 10                      |                           |               |                          |               | No   | 25-3.8 ±3                          | 93                      | 15                                |                           | 8/6                             | 18 x 18 x 24                         | Oiled Wal.     | Black Knit                | 70           | 525.00       |
|                  | Reference                                 | Inf. Baf.                                  | 18                      | 10                        | Cone          | (2)7                     | Cones         | No   | 16-25 ±3                           | 92.5                    | 25                                | 125,3k,8k                 | 8/5                             | 29 x 18 x 42                         | Oiled Wal.     | Black Knit                | 350 Pair     | 3995.00 Pair |
|                  | SW-18                                     | Inf. Baf.                                  | 24                      | 10                        | Cone          | (2)7                     | Cones         | No   | 16-25 ±3                           | 93                      | 25                                | 125,3k,8k                 | 8/5                             | 36 x 24 x 50                         | Oiled Wal.     | Black Knit                | 600 Pair     | 5195.00 Pair |
|                  | SW-24                                     | Subwoof.                                   | 18                      |                           |               |                          |               | No   | 16-350 ±4                          | 92.5                    | 25                                |                           | 5/4                             | 29 x 18 x 42                         | Oiled Wal.     | Black Knit                | 150          | 990.00       |
|                  |   | Subwoof.                                   | 24                      |                           |               |                          |               | No   | 16-250 ±3                          | 93                      | 25                                |                           | 5/4                             | 36 x 24 x 50                         | Oiled Wal.     | Black Knit                | 250          | 1295.00      |
| HEMISPHERE       | PP-140                                    | Bass Ref.                                  | 8                       | 4                         | Cone          | 1                        | Dome          |  | 30-25                              | 90                      | 40                                | 600,5k                    | 4/2                             | 21 x 11 x 11                         | Black Oak      | Black Knit                | 27           | 700.00 Pair  |
|                  | PP-140S (Tower)                           | Bass Ref.                                  | 8                       | 4                         | Cone          | 1                        | Dome          |  | 30-25                              | 90                      | 40                                | 600,5k                    | 4/2                             | 34 x 11 x 11                         | Black Oak      | Black Knit                | 27           | 800.00 Pair  |
|                  | PP-120                                    | Bass Ref.                                  | 8                       | 4                         | Cone          | 1                        | Dome          |  | 30-25                              | 88                      | 40                                | 700,5k                    | 4/2                             | 18 x 10 x 9                          | Black Oak      | Black Knit                | 22           | 500.00 Pair  |
|                  | PP-120S (Tower)                           | Bass Ref.                                  | 8                       | 4                         | Cone          | 1                        | Dome          |  | 30-25                              | 88                      | 40                                | 700,5k                    | 4/2                             | 31 x 11 x 10                         | Black Oak      | Black Knit                | 22           | 600.00 Pair  |
|                  | PP-80                                     | Bass Ref.                                  | 6                       | 3                         | Cone          | 1                        | Dome          |  | 33-25                              | 92                      | 40                                | 2k,7k                     | 4/2                             | 16 x 10 x 9                          | Black Oak      | Black Knit                | 19           | 300.00 Pair  |
| HEYBROOK         | Point Five                                | Inf. Baf.                                  | 6½                      |                           |               | ¾                        | Dome          |  | 50-20 ±3                           | 87                      | 15                                | 4k                        | 8/6                             | 8 x 8 x 14                           | Black          | Black Knit                | 28 Pair      | 299.00 Pair  |
|                  | Point Seven                               | Inf. Baf.                                  | 6½                      |                           |               | ¾                        | Dome          |  | 45-20 ±3                           | 87                      | 15                                | 4k                        | 8/6                             | 8 x 8 x 16                           | Black          | Black Knit                | 32 Pair      | 429.00 Pair  |
|                  | HB-1                                      | Inf. Baf.                                  | 8                       |                           |               | 1                        | Dome          |  | 45-20 ±3                           | 90                      | 10                                | 4k                        | 8/6                             | 12 x 11 x 18                         | Opt.           | Black Foam                | 38 Pair      | 399.00 Pair  |
|                  | HB-3                                      | Inf. Baf.                                  | 10                      | 4                         | Cone          | ¾                        | Dome          |  | 35-20 ±3                           | 89                      | 15                                | 1k,5k                     | 8/6                             | 14 x 12 x 24                         | Opt.           | Black Foam                | 78 Pair      | 1598.00 Pair |
|                  | HB-100                                    | Inf. Baf.                                  | 8                       |                           |               | ¾                        | Dome          |  | 45-20 ±3                           | 89                      | 10                                | 4k                        | 8/6                             | 11 x 13 x 19                         | Opt.           | Black Knit                | 36 Pair      | 598.00 Pair  |
|                  | HB-150                                    | Tuned Bass Ref.                            | 6½                      |                           |               | ¾                        | Dome          |  | 40-22 ±3                           | 88                      | 15                                | 4k                        | 8/6                             | 8 x 8 x 16                           | Opt.           | Black Knit                | 30 Pair      | 798.00 Pair  |
|                  | HB-200                                    | Tuned Bass Ref.                            | 6½                      |                           |               | 1                        | Dome          |  | 34-20 ±3                           | 88                      | 15                                | 3k                        | 8/6                             | 8 x 8 x 18                           | Opt.           | Black Knit                | 36 Pair      | 998.00 Pair  |
| HIGH BISCUIS     | Kevin Ingram One                          | Vented                                     | (6)7                    | 28x13                     | Horn          | 5¼x5¼                    | Horn, Leaf    |  | 40-85                              | 94                      |                                   | 600,3.5k, 12k             | 8/1                             | 68 x 28 x 32                         | Mahog.         | None                      | 130          | 1350.00      |
| HITACHI          | HSW40                                     | Ac. Sus.                                   | 6½                      |                           |               | ½                        | Dome          |  | 60-20                              | 90                      |                                   | 6k                        | 8/                              | 9 x 10 x 15                          | Matte Black    | Gray Knit                 | 13           | 290.00 Pair  |
| (Continued)      | HSW50                                     | Ac. Sus.                                   | 8                       | 5                         | Cone          | ¾                        | Dome          |  | 45-20                              | 90                      |                                   | 2k,6k                     | 8/                              | 10 x 10 x 30                         | Matte Black    | Black Knit                | 20           | 500.00 Pair  |

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# LOUDSPEAKERS

| MANUFACTURER        | Model         | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type  | Tweeter Diameter, Inches | Tweeter Type  | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Supertweeter = ST | Anechoic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish         | Grille Color and Material | Weight, Lbs. | Price, \$            |
|---------------------|---------------|--|-------------------------|---------------------------|----------------|--------------------------|---------------|---|--|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|----------------|---------------------------|--------------|----------------------|
| HITACHI (Continued) | HSA-2029B     | Bass Ref.                                  | 8                       |                           |                | 2                        | Cone          |   | 50-20  | 88                      | 7k                                | 8/                        | 12 x 8 x 35                      | Oak                                  | Black Knit     | 20                        | 200.00 Pair  |                      |
|                     | HSA-3051      | Bass Ref.                                  | 10                      | 4                         | Cone           | 2                        | Cone          |   | 45-20  | 88                      | 3k,7k                             | 8/                        | 15 x 9 x 35                      | Oak                                  | Black Knit     | 30                        | 300.00 Pair  |                      |
| ICON ACOUSTICS      | Micron        | Tuned Port                                 | 4 1/2                   |                           |                | 1                        | Dome          |   | 68-25 $\pm$ 3                                    | 89                      | 20                                | 2k                        |                                  | 6 x 10 x 7                           | Opt.           | Opt., Knit                | 10           | 595.00 Pair          |
|                     | Lumen         | Tuned Port                                 | 7                       |                           |                | 1                        | Dome          |   | 55-25 $\pm$ 3                                    | 89                      | 20                                | 2k                        |                                  | 10 x 18 x 10                         | Opt.           | Opt., Knit                | 22           | 795.00 Pair          |
|                     | Parsec        | Tuned Port                                 | 8 1/2                   |                           |                | 1                        | Dome          |   | 40-25 $\pm$ 3                                    | 90                      | 30                                | 2k                        |                                  | 11 x 38 x 11                         | Opt.           | Opt., Knit                | 50           | 995.00 Pair          |
| IMAGE               | Reference .5  | Ported                                     | 6 1/2                   |                           |                | 3/4                      | Dome          |   | 45-20 $\pm$ 3.5                                  | 87                      | 20                                | 2.5k                      | 6/4                              | 16 x 10 x 9                          | Hick. Vinyl    | Black                     | 15           | 260.00 Pair          |
|                     | Reference One | Ported                                     | 8                       |                           |                | 3/4                      | Dome          |   | 40-20 $\pm$ 3                                    | 89                      | 20                                | 2.2k                      | 6/4                              | 19 x 10 x 9                          | Hick. Vinyl    | Black                     | 20           | 350.00 Pair          |
|                     | Reference Two | Ported                                     | 8                       |                           |                | 1                        | Dome          |   | 35-20 $\pm$ 3                                    | 88                      | 20                                | 2.2k                      | 6/4                              | 24 x 11 x 12                         | Hick. Vinyl    | Black                     | 31           | 450.00 Pair          |
|                     | Concept 100   | Ported                                     | 6 1/2                   |                           |                | 3/4                      | Dome          |   | 45-23 $\pm$ 2                                    | 87                      | 35                                | 2.1k                      | 6/4                              | 16 x 9 x 11                          | Opt.           | Black Knit                | 23           | 650.00 Pair          |
|                     | Concept 200   | Ported                                     | (2)6 1/2                |                           |                | 3/4                      | Dome          |   | 35-23 $\pm$ 2                                    | 87                      | 35                                | 2.1k                      | 6/4                              | 43 x 10 x 15                         | Opt.           | Black Knit                | 66           | 1000.00 Pair         |
| IMPULSE             | I             | Ported                                     | 10                      |                           |                | 46L                      | Ribbon        | T   | 30-20 $\pm$ 2                                    | 83                      | 100                               | 175                       | 5/2                              | Two Pieces per Side                  | Oiled Wal. Oak | Metal                     | 200          | 8000.00              |
|                     | II LeF        | Ported                                     | 12                      |                           |                | (4)2                     | Cones         |   | 28-22 $\pm$ 2                                    | 88                      | 100                               | 250                       | 4/3                              | Two Pieces per Side                  | Oak            | Metal                     | 80           | 2700.00              |
|                     | III LeF       | Ported                                     | 8                       |                           |                | 2                        | Cone          |   | 46-22 $\pm$ 2                                    | 88                      | 100                               | 250                       | 4/3                              | 10 x 8 x 14                          | Oak            | Metal                     | 26           | 2200.00 Pair         |
| INFINITY            | IRS Series V  | Servo                                      | (12)12                  | (24)4x6                   | EMIMs          | (72)1/2x2                | EMITs         | M,T, ST   | 16-44 $\pm$ 2                                    | 87                      | 108                               | 70,5k                     | 4/3                              | Four Pieces                          | Santos         | Brown Cloth               | 1550 Sys.    | 50,000. Sys.         |
|                     | IRS Beta      | Servo                                      | (8)12                   | (4)16x8, (2)4x6           | L-EMIMs, EMIMs | (4)1/2x2, (2)1/2x1       | EMITs, SEMITs | M,T, ST   | 25-44 $\pm$ 2                                    | 87                      | 75                                | 70,700, 4k,8k             | 4/3                              | Four Pieces                          | Santos         | Black Cloth               |              | 11,950. Sys.         |
|                     | IRS Gamma     | Servo                                      | (4)12                   | (2)16x8, (2)4x6           | L-EMIMs, EMIMs | (4)1/2x2, (2)1/2x1       | EMITs, SEMITs | M,T, ST   | 25-44 $\pm$ 2                                    | 86                      | 60                                | 70,700, 4k,8k             | 4/3                              | 22 x 15 x 62                         | Santos         | Black Cloth               |              | 6950.00 Pair w/Xover |
|                     | IRS Delta     | Sealed Box                                 | (4)12                   | (2)16x8, (2)4x6           | L-EMIMs, EMIMs | (4)1/2x2, (2)1/2x1       | EMITs, SEMITs | M,T, ST   | 29-44 $\pm$ 2                                    | 86                      | 60                                | 70,700, 4k,8k             | 4/3                              | 22 x 15 x 62                         | Santos         | Black Cloth               |              | 5500.00 Pair         |
|                     | RS1001        | Sealed Box                                 | 4 1/2                   |                           |                |                          | Dome          |   | 70-22 $\pm$ 3                                    | 89                      | 8                                 | 4.5k                      | 6/                               | 13 x 8 x 6                           | Vinyl          | Black                     |              | 170.00 Pair          |
|                     | RS2001        | Sealed Box                                 | 6 1/2                   |                           |                | 3/4                      | Dome          |   | 55-22 $\pm$ 3                                    | 89                      | 15                                | 4.8k                      | 6/                               | 14 x 9 x 7                           | Vinyl          | Black                     |              | 238.00 Pair          |
|                     | RS3001        | Sealed Box                                 | 8                       |                           |                | 3/4                      | Dome          | T   | 45-22 $\pm$ 3                                    | 89                      | 20                                | 4k                        | 6/                               | 21 x 12 x 9                          | Vinyl          | Black                     |              | 398.00 Pair          |
|                     | RS4001        | Sealed Box                                 | 8                       | 2                         | Dome           | 3/4                      | Dome          | T   | 44-22 $\pm$ 3                                    | 89                      | 25                                | 600,4k                    | 6/                               | 23 x 12 x 9                          | Vinyl          | Black                     |              | 538.00 Pair          |
|                     | RS5001        | Sealed Box                                 | 8                       | 2                         | Dome           | 2                        | Dome          | M,T   | 42-45 $\pm$ 3                                    | 89                      | 25                                | 600,4.2k                  | 6/                               | 31 x 12 x 9                          | Vinyl          | Black                     |              | 738.00 Pair          |
|                     | RS6001        | Sealed Box                                 | (2)8                    | 2                         | Dome           | 2                        | Dome          | M,T   | 42-45 $\pm$ 3                                    | 89                      | 35                                | 600,4.2k                  | 6/                               | 37 x 12 x 9                          | Vinyl          | Black                     |              | 1058.00 Pair         |
|                     | RS Subwoofer  | Subwoof.                                   | 10                      |                           |                |                          |               | W   | 30-200 (Var.)                                    |                         |                                   | 50-200 (Var.)             |                                  | 23 x 13 x 10                         | Black Vinyl    |                           |              | 600.00               |
|                     | RS 9 Kappa    | Sealed Box                                 | (2)12                   | 3                         | Dome           |                          | EMIT K        | M,T   | 29-45  | 89                      | 60                                | 80,800, 4.5k              | 4/2                              | 60 x 22 x 8                          |                | Black                     |              | 2898.00 Pair         |
|                     | RS 8 Kappa    | Sealed Box                                 | 12                      | 3                         | Dome           |                          | EMIT K        | M,T   | 33-45  | 89                      | 50                                | 80,800, 4.5k              | 4/2                              | 48 x 21 x 8                          |                | Black                     |              | 1998.00 Pair         |
|                     | RS 7 Kappa    | Sealed Box                                 | 12                      | 3                         | Dome           |                          | EMIT K        | M,T   | 37-45  | 88                      | 40                                | 800,4.5k                  | 4/4                              | 37 x 17 x 12                         |                | Black                     |              | 1398.00 Pair         |
|                     | RS 6 Kappa    | Sealed Box                                 | 10                      | 3                         | Dome           |                          | EMIT K        | M,T   | 39-45  | 88                      | 30                                | 800,4.5k                  | 4/4                              | 25 x 15 x 11                         |                | Black                     |              | 998.00 Pair          |
|                     | RS 5 Kappa    | Sealed Box                                 | 6 1/2                   |                           |                |                          | EMIT K        | T   | 50-45  | 86                      | 25                                | 3.5k                      |                                  | 17 x 11 x 10                         |                | Black                     |              | 798.00 Pair          |
|                     | SM 150        | Ported                                     | 15                      | 4 1/2                     | Cone           | 1                        | Dome          | M,T   | 44-25 $\pm$ 3                                    | 101                     | 10                                | 500,5.5k                  | 8/                               | 40 x 19 x 13                         | Vinyl          | Black                     |              | 1118.00 Pair         |
|                     | SM 120        | Ported                                     | 12                      | 4 1/2                     | Cone           | 1                        | Dome          | M,T   | 49-25 $\pm$ 3                                    | 98                      | 10                                | 750,5.5k                  | 8/                               | 33 x 16 x 13                         | Vinyl          | Black                     |              | 798.00 Pair          |
|                     | SM 100        | Ported                                     | 10                      |                           |                | 1                        | Dome          | T   | 59-25 $\pm$ 3                                    | 98                      | 10                                | 2.5k                      | 8/                               | 30 x 14 x 13                         | Vinyl          | Black                     |              | 558.00 Pair          |
|                     | SM 80         | Ported                                     | 8                       |                           |                | 1                        | Dome          |   | 70-25 $\pm$ 3                                    | 98                      | 10                                |                           | 8/                               | 11 x 11 x 18                         | Vinyl          | Black                     |              | 438.00 Pair          |
|                     | ERS800        | In-Wall                                    | 8                       |                           |                |                          | EMIT          | T   | 45-45  | 89                      | 20                                | 3.5k                      | 4/3.5                            | 16 x 11 x 4                          | Beige ABS      | Beige Metal               |              | 600.00 Pair          |
|                     | ERS600        | In-Wall                                    | 6                       |                           |                | 3/4                      | Dome          | T   | 55-22  | 89                      | 15                                | 4.4k                      | 4/4                              | 18 x 9 x 4                           | Beige ABS      | Beige Metal               |              | 350.00 Pair          |
|                     | ERS500        | In-Wall                                    | 5 1/4                   |                           |                | 1                        | Cone          |   | 70-20  |                         | 8                                 | 5k                        |                                  | 8 x 8 x 3                            | Beige ABS      | Beige Metal               |              | 275.00 Pair          |
|                     | Modulus       | Sealed Box                                 | 5                       |                           |                |                          | EMIT          | T   | 82-45 $\pm$ 3                                    | 84                      | 25                                | 4k                        | 4/4                              | 12 x 7 x 11                          | Opt., Lacq.    | Black Knit                |              | 1000.00 Pair         |
| INTEGRAL AUDIO      | Point Source  | Pas. Rad.                                  | 8                       | 6                         | Cone           | 1                        | Dome          | T   | 32-20 $\pm$ 3                                    | 92                      | 25                                | 150,3k                    | 4/2                              | 38 x 10 x 10                         | Black Lacq.    | Black Knit                | 40           | 995.00 Pair          |
| ISLAND AUDIO        | IA-100        | Bass Ref.                                  | 6 1/2                   |                           |                | 1                        | Dome          | No  | 55-20 $\pm$ 3                                    | 90                      | 25                                |                           | 8/                               | 8 x 8 x 13                           | Oiled Oak      | Black Knit                | 12           | 400.00 Pair          |
| (Continued)         | IA-100R       | Pas. Rad.                                  | 6 1/2                   |                           |                | 1                        | Dome          | No  | 49-20 $\pm$ 3                                    | 90                      | 25                                |                           | 8/                               | 8 x 8 x 13                           | Oiled Wal.     | Black Knit                | 12           | 475.00 Pair          |



# LOUDSPEAKERS

| MANUFACTURER                | Model          |                              |       | Design Principle, Enclosure or System Type |                           |               |       |        |              |    |         |                |              |              |                   |             |          |         |  |  |
|-----------------------------|----------------|------------------------------|-------|--|---------------------------|---------------|-------|--------|--------------|----|---------|----------------|--------------|--------------|-------------------|-------------|----------|---------|--|--|
|                             |                |                              |       | Woofer Diameter, Inches                    | Midrange Diameter, Inches | Midrange Type |       |        |              |    |         |                |              |              |                   |             |          |         |  |  |
| ISLAND AUDIO<br>(Continued) | IA-700         | Bass Ref.                    | (2)6½ |  |                           | (2)1          | Domes | No     | 55-20<br>±3  | 92 | 25      |                | 4/           | 8 x 8 x 27   | Oiled Oak         | Black Knit  | 27       | 675.00  |  |  |
|                             | IA-800         | Pas. Rad.                    | 8     |  |                           | 1             | Dome  | No     | 40-20<br>±3  | 90 | 25      | 8/             | 11 x 11 x 19 | Oiled Oak    | Black Knit        | 23          | 775.00   |         |  |  |
|                             | IA-600         | Pas. Rad.                    | 12    | 1¼   | Dome                      | (2)1          | Domes | No     | 32-22<br>±3  | 90 | 25      | 8/             | 14 x 13 x 32 | Oiled Oak    | Black Knit        | 58          | 1200.00  |         |  |  |
|                             | IA-850         | Bass. Ref.                   | 12    | 1¼   | Dome                      | (2)1          | Domes | No     | 28-22<br>±3  | 91 | 25      | 8/             | 15 x 12 x 25 | Oiled Oak    | Black Knit        | 45          | 1350.00  |         |  |  |
|                             | Islander       | Sealed, Outdoor              | 6½    |  |                           | 1             | Dome  | No     | 55-20<br>±5  | 89 | 50      | 4/             | 7 x 7 x 27   | Matte Black  | Wire Mesh         | 20          | 800.00   |         |  |  |
|                             | Islander Light | Sealed, Outdoor              | 6½    |  |                           | 1             | Dome  | No     | 55-20<br>±5  | 89 | 50      | 4/             | 7 x 7 x 31   | Matte Black  | Wire Mesh         | 25          | 1200.00  |         |  |  |
| JACKSON<br>LOUDSPEAKER      | AU-3           | Air Sus.                     | 5¼    |  |                           | 1,½           | Domes |        | 85-20<br>±3  | 87 | 30      | 2.5k,12k       | 8/6          | 14 x 7 x 7   | Opt.              | Opt., Knit  | 17 Pair  | 929.00  |  |  |
|                             | AU-6           | Hybrid, Pas. Rad.            | 6½,8  |  |                           | 1,½           | Domes |        | 48-20<br>±3  | 87 | 50      | 2k,10k         | 8/6          | 17 x 11 x 11 | Opt.              | Opt., Knit  | 45 Pair  | 1799.00 |  |  |
|                             | AU-20          | Hybrid, Pas. Rad. Subwoof.   | 10,15 |  |                           |               |       |        | 33-100<br>±3 | 90 | 100     | 100            | 8/6          | 18 x 17 x 18 | Opt.              | Opt., Knit  | 57 Pair  | 899.00  |  |  |
| JAMO                        | Concert II     | Bass Ref.                    | 6½    |  | Cone                      | 1             | Dome  | No     | 40-20<br>±3  | 96 | 40      | 2k             | 8/3          | 16 x 9 x 10  | Opt., Wood        | Black       | 20       | 750.00  |  |  |
|                             | Concert V      | Bass Ref.                    | 6½    | 6½   | Cone                      | 1             | Dome  | No     | 30-22<br>±3  | 96 | 40      | 150,3.5k       | 6/3          | 32 x 7 x 11  | Opt., Wood        | Black       | 42       | 1200.00 |  |  |
|                             | Concert VII    | Bass Ref.                    | (2)8  | 6½   | Cone                      | 1             | Dome  | No     | 24-22<br>±3  | 96 | 40      | 150,4k         | 6/3          | 36 x 11 x 12 | Opt., Wood        | Black       | 62       | 1698.00 |  |  |
|                             | SW60           | Sat. & Powered Subwoof.      | 10    | 4  | Cone                      | 2             | Cone  | W      | 25-20<br>±3  | 96 | 30      | 70,3k          | 6/           | Three Pieces | Opt., Enam.       | Wire Mesh   | 34½ Sys. | 799.00  |  |  |
|                             | SW3            | Sat. & Subwoof.              | (2)6½ | 4  | Cone                      | 2             | Cone  |        | 35-20<br>±3  | 96 | 45      | 200,4.5k       | 8/3          | Three Pieces | Opt.              | Wire Mesh   | 29 Sys.  | 499.00  |  |  |
|                             | Jamo Art       | Bass Ref.                    | 5     |  |                           | 1             | Dome  |        | 40-20<br>±3  | 83 | 35      | 3k             | 8/3          | 14 x 16 x 4  | Opt.              | Wire Mesh   | 11       | 499.00  |  |  |
| JANIS                       | W1             | Slot Loaded Subwoof.         | 15    |  |                           |               |       |        | 30-100<br>±1 | 87 | 60      | 100            | 8/7          | 18 x 22 x 22 | Oiled Wal.        | Wood        | 100      | 850.00  |  |  |
|                             | W3             | Slot Loaded Subwoof.         | 12    |  |                           |               |       |        | 30-100<br>±1 | 85 | 60      | 100            | 8/7          | 18 x 18 x 18 | Oiled Wal.        | Wood        | 67       | 600.00  |  |  |
|                             | System 3/A     | Powered Slot Loaded Subwoof. | 12    |  |                           |               |       |        | 30-100<br>±1 | 85 | 50 Inc. | 100            | 8/7          | 18 x 18 x 18 | Oiled Wal.        | Wood        | 87       | 950.00  |  |  |
| JBL                         | JBL2500        | Ported                       | 5¼    |  |                           | ½             | Dome  |        | 90-23        | 88 | 10      | 3k             | 8/6          | 12 x 7 x 6   | Oak Vinyl         | Gray Knit   | 8        | 89.00   |  |  |
|                             | JBL2600        | Ported                       | 6½    |  |                           | ½             | Dome  |        | 60-23        | 89 | 10      | 3k             | 8/6          | 17 x 9 x 8   | Oak Vinyl         | Gray Knit   | 12       | 119.00  |  |  |
|                             | JBL2800        | Ported                       | 8     |  |                           | ½             | Dome  |        | 55-23        | 89 | 10      | 2.5k           | 8/6          | 23 x 11 x 10 | Oak Vinyl         | Gray Knit   | 20       | 169.00  |  |  |
|                             | JBL3800        | Ported                       | 8     | 5  | Cone                      | ½             | Dome  |        | 50-23        | 89 | 10      | 800,4.5k       | 8/6          | 32 x 11 x 10 | Oak Vinyl         | Gray Knit   | 29       | 279.00  |  |  |
|                             | JBL4800        | Tuned Port                   | 10    | 5  | Cone                      | ½             | Dome  |        | 50-23        | 91 | 10      | 800,4.5k       | 8/6          | 35 x 13 x 14 | Oak Vinyl         | Gray Knit   | 36       | 349.00  |  |  |
|                             | LX22           | Tuned Port                   | 6½    |  |                           | 1             | Dome  |        | 50-25        | 90 | 10      | 3k             | 8/6          | 16 x 10 x 9  | Opt., Vinyl       | Gray Knit   | 42 Pair  | 179.00  |  |  |
|                             | LX44           | Tuned Port                   | 8     | 5  | Cone                      | 1             | Dome  |        | 45-25        | 91 | 10      | 800,4k         | 8/6          | 24 x 12 x 12 | Opt., Vinyl       | Gray Knit   | 33       | 279.00  |  |  |
|                             | LX55           | Tuned Port                   | 10    | 5  | Cone                      | 1             | Dome  |        | 40-25        | 91 | 10      | 800,4k         | 8/6          | 26 x 14 x 12 | Opt., Vinyl       | Gray Knit   | 62       | 399.00  |  |  |
|                             | L20t3          | Tuned Port                   | 6¼    |  |                           | 1             | Dome  |        | 55-27        | 87 | 20      | 3k             | 8/6          | 10 x 16 x 8  | Opt., Vinyl       | Gray Knit   | 14       | 299.00  |  |  |
|                             | L40t3          | Tuned Port                   | 8     |  |                           | 1             | Dome  |        | 45-27        | 88 | 20      | 2.5k           | 8/6          | 11 x 21 x 10 | Wood Opt.,        | Gray Knit   | 24       | 399.00  |  |  |
|                             | L80t3          | Tuned Port                   | 10    | 5  | Cone                      | 1             | Dome  |        | 40-27        | 90 | 20      | 800,4.5k       | 8/6          | 13 x 32 x 14 | Wood Opt.,        | Gray Knit   | 44       | 549.00  |  |  |
|                             | L100t3         | Tuned Port                   | 12    | 5  | Cone                      | 1             | Dome  |        | 35-27        | 91 | 20      | 800,4.5k       | 8/6          | 15 x 36 x 16 | Wood Opt.,        | Gray Knit   | 58       | 699.00  |  |  |
|                             | Pro III        | Tuned Port                   | 5     |  |                           | 1             | Dome  |        | 65-27        | 87 | 10      | 3k             | 4/3          | 9 x 6 x 6    | Wood Poly& Rubber | Black Metal | 13 Pair  | 289.00  |  |  |
|                             | Pro VIII       | Tuned Port                   | 6     |  |                           | 1             | Dome  |        | 55-27        | 90 | 10      | 3k             | 6/5          | 15 x 10 x 9  | Poly& Rubber      | Black Metal | 20 Pair  | 429.00  |  |  |
|                             | S-1            | Subwoof.                     | 8     |  |                           | (4)½          | Domes |        | 40-200       | 88 | 10      | 125            | 8/6          | 34 x 10 x 10 | Opt. Wal.         | White Metal | 38       | 299.00  |  |  |
|                             | S-2            | In-Wall Inf. Baf.            | 8     |  |                           | 1             | Dome  |        | 40-20        | 86 | 10      | 3k             | 8/6          | 40 x 10 x 10 | Matte White       | White Metal | 40       | 549.00  |  |  |
|                             | S-3            | In-Wall Inf. Baf.            | 5¼    |  |                           | 1             | Dome  |        | 125-22       | 86 | 10      | 3k             | 4/3          | 11 x 7 x 4   | Matte White       | White Metal | 14       | 249.00  |  |  |
|                             | S-4            | In-Wall Inf. Baf.            | 6¼    |  |                           | 1             | Dome  |        | 125-22       | 88 | 10      | 3k             | 4/3          | 12 x 9 x 4   | Matte White       | White Metal | 16       | 299.00  |  |  |
|                             | 18Ti           | Tuned Port                   | 6½    |  |                           | 1             | Dome  |        |              | 88 | 20      | 3k             | 8/6          | 15 x 9 x 7   | Teak              | Brown Knit  | 34       | 379.00  |  |  |
|                             | 120Ti          | Tuned Port                   | 12    | 5  | Cone                      | 1             | Dome  | M,T    |              | 89 | 30      | 900,4k         | 8/6          | 25 x 14 x 11 | Teak              | Brown Knit  | 56       | 699.00  |  |  |
|                             | 240Ti          | Tuned Port                   | 14    | 5  | Cone                      | 1             | Dome  | M,T    |              | 89 | 40      | 900,4k         | 8/6          | 37 x 18 x 12 | Teak              | Brown Knit  | 85       | 1099.00 |  |  |
|                             | 250Ti          | Tuned Port                   | 14    | 5,8  | Cones                     | 1             | Dome  | (2)M,T |              | 90 | 50      | 400,1.4k, 5.2k | 8/6          | 52 x 23 x 14 | Teak              | Brown Knit  | 150      | 2399.00 |  |  |
|                             | B380           | Biamp Subwoof.               | 15    |  |                           |               |       |        |              | 90 | 50      | 63 Ext.        | 8/6          | 20 x 28 x 17 | Wal.              | Brown Knit  | 70       | 899.00  |  |  |
|                             | B460           | Biamp Subwoof.               | 18    |  |                           |               |       |        |              | 94 | 50      | 63 Ext.        | 8/6          | 25 x 38 x 24 | Wal.              | Brown Knit  | 126      | 1999.00 |  |  |



# LOUDSPEAKERS

| MANUFACTURER        | Model               |                                     | Design Principle, Enclosure or System Type | Woofer Diameter, Inches |            | Midrange Diameter, Inches |              | Tweeter Diameter, Inches |             | Tweeter Type |             | Separate Level Controls |             | Amplifier Frequency Response, Hz to kHz, ±dB |              | SPL, 1 Watt/1 Meter, dB |       | Recommended Min. Amp Power, Watts |              | Crossover Frequencies, Hz |            | Impedance Ohms-Nominal/Minimum |    | Dimensions, Inches (To Nearest Inch) |  | Finish |  | Grille Color and Material |         | Weight, Lbs. |         | Price, \$ |  |
|---------------------|---------------------|-------------------------------------|--|-------------------------|------------|---------------------------|--------------|--------------------------|-------------|--------------|-------------|-------------------------|-------------|--|--------------|-------------------------|-------|-----------------------------------|--------------|---------------------------|------------|--------------------------------|----|--------------------------------------|--|--------|--|---------------------------|---------|--------------|---------|-----------|--|
|                     |                     |                                     |  |                         |            |                           |              |                          |             |              |             |                         |             |  |              |                         |       |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         |              |         |           |  |
| JENSEN              | Concert Series 2650 | Vented                              | 6½   |                         |            |                           | 3            | Cone                     |             |              |             | 55-21                   | 90          |  |              |                         |       | 8/                                |              | 15 x 11 x 6               | Hick.      | Black Knit                     | 11 |                                      |  |        |  |                           |         | 149.95       | Pair    |           |  |
|                     | Concert Series 3121 | Vented                              | 12   | 5                       | Cone       | 3                         | Cone         |                          |             |              | 43-21       | 91                      |             |  |              |                         | 8/    |                                   | 29 x 16 x 11 | Oak                       | Black Knit | 30                             |    |                                      |  |        |  |                           | 279.95  | Pair         |         |           |  |
|                     | Concert Series 3100 | Vented                              | 10   | 5                       | Cone       | 3                         | Cone         |                          |             |              | 48-21       | 90                      |             |  |              |                         | 8/    |                                   | 20 x 13 x 11 | Wal. Vinyl                | Black Knit | 24                             |    |                                      |  |        |  |                           | 219.95  | Pair         |         |           |  |
|                     | Concert Series 3120 | Vented                              | 12   | 5                       | Cone       | 3                         | Cone         |                          |             |              | 43-21       | 91                      |             |  |              |                         | 8/    |                                   | 29 x 16 x 11 | Wal. Vinyl                | Black Knit | 30                             |    |                                      |  |        |  |                           | 279.95  | Pair         |         |           |  |
|                     | Concert Series 3150 | Vented                              | 15   | 5                       | Cone       | 3                         | Cone         |                          |             |              | 33-21       | 94                      |             |  |              |                         | 8/    |                                   | 32 x 18 x 11 | Hick. Vinyl               | Black Knit | 45                             |    |                                      |  |        |  |                           | 349.90  | Pair         |         |           |  |
| JPW LOUDSPEAKERS    | AP3                 | Inf. Baf.                           | 8  |                         |            | ¾                         | Dome         |                          |             |              | 55-20 ±3    | 89                      | 10          | 3.2k   |              |                         | 8/6.2 |                                   | 21 x 10 x 12 | Opt., Wood                | Opt., Knit | 53                             |    |                                      |  |        |  |                           | 599.50  | Pair         |         |           |  |
|                     | AP2                 | Inf. Baf.                           | 8  |                         |            | ¾                         | Dome         |                          |             |              | 60-20 ±3    | 89                      | 10          | 3.2k   |              |                         | 8/6.2 |                                   | 17 x 10 x 10 | Opt., Wood                | Opt., Knit | 42                             |    |                                      |  |        |  |                           | 399.50  | Pair         |         |           |  |
|                     | P1                  | Inf. Baf.                           | 8  |                         |            | ¾                         | Dome         |                          |             |              | 65-20 ±3    | 90                      | 10          | 3.2k   |              |                         | 8/6.2 |                                   | 17 x 10 x 10 | Opt., Wood                | Opt., Knit | 34                             |    |                                      |  |        |  |                           | 349.50  | Pair         |         |           |  |
| JRM                 | Monitor             | Powered                             | (2)12, (6)6½                               | (2)4                    | Cones      | (4)3                      | Horns        | W,M, T,ST                | 18-20       |              | Inc.        | 150,1k,5k               |             | Three Pieces                                 | Opt.         | Opt.                    |       |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 2500.00      | Sys.    |           |  |
|                     | S18A                | B4 Vented Subwoof. QB3              | 18   |                         |            |                           |              |                          | 25-250 ±1.5 | 95           | 200         | Sel.                    | 8/6         | 36 x 30 x 24                                 | Opt.         | Opt.                    | 175   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 500.00       |         |           |  |
|                     | S18B                | Vented Subwoof. QB3                 | 18   |                         |            |                           |              |                          | 27-250 ±1.5 | 94           | 200         | Sel.                    | 8/7         | 36 x 25 x 24                                 | Opt.         | Opt.                    | 175   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 650.00       |         |           |  |
|                     | S18B-6              | B6 Vented Subwoof. QB3              | 18   |                         |            |                           |              |                          | 20-250 ±1.5 | 94           | 200         | Sel.                    | 8/7         | 36 x 25 x 24                                 | Opt.         | Opt.                    | 175   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 650.00       |         |           |  |
|                     | S15A                | Vented Subwoof. QB3                 | 15   |                         |            |                           |              |                          | 27-300 ±1.5 | 91           | 200         | Sel.                    | 8/7         | 36 x 23 x 16                                 | Opt.         | Opt.                    | 130   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 525.00       |         |           |  |
|                     | S15A-6              | B6 Vented Subwoof. QB3              | 15   |                         |            |                           |              |                          | 20-300 ±1.5 | 91           | 200         | Sel.                    | 8/7         | 36 x 23 x 16                                 | Opt.         | Opt.                    | 130   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 525.00       |         |           |  |
|                     | D15A                | C4 Vented Subwoof. QB3              | (2)15                                      |                         |            |                           |              |                          | 18-300 ±1.5 | 89           | 200         | Sel.                    | Sel.        | 48 x 34 x 24                                 | Opt.         | Opt.                    | 200   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 575.00       |         |           |  |
|                     | D12A                | Vented Subwoof. QB3                 | (2)12                                      |                         |            |                           |              |                          | 27-450 ±1.5 | 88           | 200         | Sel.                    | Sel.        | 36 x 23 x 18                                 | Opt.         | Opt.                    | 150   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 475.00       |         |           |  |
|                     | D12A-6              | B6 Vented Subwoof. Triamped, Sealed | (2)12                                      |                         |            |                           |              |                          | 18-450 ±1.5 | 88           | 200         | Sel.                    | Sel.        | 36 x 23 x 18                                 | Opt.         | Opt.                    | 150   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 475.00       |         |           |  |
| VLS Satellite Tower |                     | (6)6½                               | 3x26                                       | Horn                    | 1⅞         | Horn                      | W,M, T       | 20-20                    | 98          | 200 (2) 40   | 150,800, 7k | Sel.                    | 8 x 16 x 66 | Opt.   | Opt.         |                         |       |                                   |              |                           |            |                                |    |                                      |  |        |  |                           | 1400.00 |              |         |           |  |
| JS AUDIO            | 26J                 | Ac. Sus.                            | 6  |                         |            | 1                         | Dome         |                          | 46-21 ±4    | 94           | 5           | 2.5k                    | 8/          | 12 x 8 x 8                                   | Oak          | Opt.                    | 35    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 450.00       | Pair    |           |  |
|                     | 26P                 | Vented                              | 6  |                         |            | 1                         | Dome         |                          | 40-22 ±3    | 92           | 15          | 2.5k                    | 8/          | 16 x 10 x 11                                 | Oak          | Opt.                    | 45    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 600.00       | Pair    |           |  |
|                     | 28P                 | Ac. Sus.                            | 8  |                         |            | 1                         | Dome         |                          | 38-22 ±4    | 91           | 15          | 2.5k                    | 8/          | 19 x 12 x 10                                 | Oak          | Opt.                    | 50    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 600.00       | Pair    |           |  |
|                     | 38P                 | Vented                              | 8  | 3                       | Cone       | 1                         | Dome         |                          | 32-22 ±3    | 93           | 15          | 700,4k                  | 8/          | 19 x 12 x 10                                 | Oak          | Opt.                    | 65    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 1100.00      | Pair    |           |  |
|                     | 310P                | Vented                              | 10   | 5                       | Cone       | 1                         | Dome         |                          | 28-22 ±3    | 95           | 15          | 700,4k                  | 8/          | 24 x 14 x 10                                 | Oak          | Opt.                    | 120   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 1500.00      | Pair    |           |  |
|                     | 412P                | Vented                              | 12   | 5                       | Cone       | (2)1                      | Dome, Horn   |                          | 24-40 ±3    | 98           | 15          | 600,4k, 10k             | 8/          | 27 x 16 x 12                                 | Oak          | Opt.                    | 150   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 2000.00      | Pair    |           |  |
|                     | 415P                | Vented                              | 15   | 5                       | Cone       | (3)1                      | Dome, Horns  |                          | 22-24 ±3    | 99           | 30          | 600,4k, 12k             | 8/          | 36 x 19 x 12                                 | Oak          | Opt.                    | 200   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 2800.00      | Pair    |           |  |
|                     | 310N                | Vented                              | 10   | 4                       | Cone       | 1                         | Dome         |                          | 32-22 ±3    | 91           | 20          | 700,3k                  | 8/          | 24 x 14 x 10                                 | Oak          | Opt.                    | 120   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 1500.00      | Pair    |           |  |
|                     | 313N                | Vented                              | 13   | 4                       | Cone       | 1                         | Dome         |                          | 25-22 ±3    | 91           | 20          | 600,3k                  | 8/          | 32 x 16 x 12                                 | Oak          | Opt.                    | 160   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 1800.00      | Pair    |           |  |
|                     | Mesa II             | Trans. Line                         | 12   | 2                       | Dome       | 1½,1                      | Horns        |                          | 25-25 ±2    | 90           | 40          | 400,3k, 10k             | 8/          | 33 x 16 x 15                                 | Oak          | Opt.                    | 180   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 4000.00      | Pair    |           |  |
|                     | 612P                | Vented                              | (2)12                                      | (2)5                    | Cones      | (4)1                      | Domes, Horns |                          | 24-22 ±3    | 99           | 30          | 600,4k, 10k             | 8/4         | 74 x 16 x 12                                 | Oak          | Opt.                    | 300   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         |              | 4800.00 | Pair      |  |
|                     | DC1                 | Vented                              | (2)10                                      | (2)4                    | Cones      | (4)1                      | Domes        |                          | 22-20 ±2    | 96           | 50          | 400,4k, 10k             | 8/4         | 61 x 8 x 16                                  | Oak          | Opt.                    | 200   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 5400.00      | Pair    |           |  |
|                     | Subwoofer           | Vented Subwoof.                     | 15   |                         |            |                           |              |                          |             | 20-120       | 91          | 40                      | 120         | 8/4  | 18 x 18 x 19 | Oak                     | Opt.  | 78                                |              |                           |            |                                |    |                                      |  |        |  |                           |         | 900.00       | Pair    |           |  |
| Shelf Subwoofer     | Vented Subwoof.     | 10                                  |  |                         |            |                           |              |                          | 24-120      | 89           | 40          | 120                     | 8/4         | 24 x 14 x 10                                 | Oak          | Opt.                    | 40    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           | 600.00  |              |         |           |  |
| JS ENGINEERING      | .6                  | Vented                              | 8  |                         |            | 1                         | Dome         | No                       | 45-18 ±2    | 90           | 30          | 2.2k                    | 8/6         | 11 x 13 x 23                                 | Opt.         | Black Knit              | 35    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 599.00       | Pair    |           |  |
|                     | .8                  | Phase-Shift Loaded                  | 8  | 8                       | Cone       | 1                         | Dome         | No                       | 40-20 ±2    | 90           | 30          | 250,2.2k                | 8/6         | 12 x 15 x 29                                 | Opt.         | Black Knit              | 50    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 899.00       | Pair    |           |  |
|                     | 1                   | Phase-Shift Loaded                  | 8  | 7                       | Cone       | 1                         | Dome         | No                       | 40-20 ±1.5  | 90           | 40          | 250,2k                  | 8/6         | 13 x 15 x 29                                 | Opt.         | Black Knit              | 55    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 1095.00      | Pair    |           |  |
|                     | 1.8A                | Phase-Shift Loaded                  | (2)10                                      | 6½                      | Cone       | 1                         | Dome         | No                       | 35-20 ±1.5  | 90           | 50          | 150,2k                  | 8/6         | 15 x 17 x 38                                 | Opt.         | Black Knit              | 110   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 1795.00      | Pair    |           |  |
|                     | 2A                  | Phase-Shift Loaded                  | 10,12                                      | 2,6½                    | Dome, Cone | ¾                         | Dome         | No                       | 25-26 ±1.5  | 90           | 50          | 150,1k,4k               | 8/6         | 17 x 17 x 45                                 | Opt.         | Black Knit              | 125   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 2495.00      | Pair    |           |  |
|                     | 4                   | Phase-Shift Loaded                  | (2)10                                      | 2,7                     | Dome, Cone | ¾                         | Dome         | No                       | 25-26 ±1    | 89           | 70          | 110,1k                  | 8/6         | 19 x 22 x 48                                 | Opt.         | Black Knit              | 140   |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 4500.00      | Pair    |           |  |
| JVC                 | SXA3                | Pas. Rad.                           | 8  |                         |            | 1                         | Dome         | T                        | 35-23       | 88           |             | 2k                      | 6/          | 14 x 25 x 12                                 | Wood Vinyl   | Gray Knit               | 34    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 400.00       | Pair    |           |  |
|                     | SXA6                | Pas. Rad.                           | 8  | 1¼                      | Dome       | 1                         | Dome         | T                        | 25-23       | 89           |             | 1.2k,6.5k               | 6/          | 16 x 32 x 11                                 | Wood Vinyl   | Gray Knit               | 39    |                                   |              |                           |            |                                |    |                                      |  |        |  |                           |         | 240.00       | Pair    |           |  |



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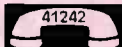
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# LOUDSPEAKERS

| MANUFACTURER                 | Model                  |                                  | Design Principle | Enclosure or System Type |            |                           |       |                          | Speaker Type  |             |              |                         |        | Frequency Response                |                 |                           |         |                                    | Power   |  |  |  |  | Dimensions, Inches<br>(To Nearest Inch) | Finish | Grille Color and Material | Weight, Lbs. | Price, \$ |
|------------------------------|------------------------|----------------------------------|------------------|--------------------------|------------|---------------------------|-------|--------------------------|---------------|-------------|--------------|-------------------------|--------|-----------------------------------|-----------------|---------------------------|---------|------------------------------------|---------|--|--|--|--|---|--------|---------------------------|--------------|-----------|
|                              |                        |                                  |                  | Woofer Diameter, Inches  |            | Midrange Diameter, Inches |       | Tweeter Diameter, Inches |               | Sensitivity |              | SPL, 1 Watt/1 Meter, dB |        | Recommended Min. Amp Power, Watts |                 | Crossover Frequencies, Hz |         | Impedance Ohms:<br>Nominal/Minimum |         |  |  |  |  |   |        |                           |              |           |
|                              |                        |                                  |                  |                          |            |                           |       |                          |               |             |              |                         |        |                                   |                 |                           |         |                                    |         |  |  |  |  |   |        |                           |              |           |
| KINETIC AUDIO<br>(Continued) | Trapezoid              | TATL                             | 12               | 6½                       | Cone       | 1,¾                       | Domes | M,T,<br>ST<br>M,T        | 18-22<br>±1.5 | 92          | 20           | 90,2k,7k                | 8/6    | 16 x 14 x 40                      | Oiled Wal.      | Black Knit                | 115     | 2000.00                            |         |  |  |  |  |   |        |                           |              |           |
|                              | Stat Monitor           | TATL                             | 12               | 6½                       | Cone       |                           | Dome  |                          | 18-22<br>±1.5 | 93          | 15           | 90,2k                   | 8/6    | 15 x 14 x 26                      | Oiled Wal.      | Black Knit                | 95      | 1000.00                            |         |  |  |  |  |   |        |                           |              |           |
|                              | Stat Miniature Monitor | TAL<br>(Tap. Ac. Line)           | 6½               |                          |            | 1                         | Dome  | T                        | 38-22<br>±2   | 93          | 5            | 2k                      | 8/6    | 9 x 9 x 15                        | Oiled Wal.      | Black Knit                | 30      | 700.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Stat S/W               | TATL Subwoof.                    | 12               |                          |            |                           |       |                          | 18-2<br>±2    | 93          | 15           | 180,2k                  | 8/6    | 15 x 14 x 26                      | Oiled Wal.      | Black Knit                | 80      | 450.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Trapezoid S/W          | TATL Subwoof.                    | 12               |                          |            |                           |       |                          | 16-2<br>±1.5  | 92          | 25           | 180,2k                  | 8/6    | 16 x 14 x 40                      | Oiled Wal.      | Black Knit                | 95      | 600.00                             |         |  |  |  |  |   |        |                           |              |           |
| KIRKSAETER                   | Monitor Tower 260 CD   | Inf. Baf.                        | (2)10            | 5,2                      | Cone, Dome | ¾                         | Dome  |                          | 20-32         | 93          | 10           | 200,1k,5k               | 8/4    | 11 x 11 x 42                      | Opt., Wood Knit | Dark Knit                 | 53      | 2299.00                            |         |  |  |  |  |   |        |                           |              |           |
|                              | Monitor Tower 140 CD   | Inf. Baf.                        | 10               | 5                        | Cone       | ¾                         | Dome  |                          | 22-32         | 92          | 10           | 500,5k                  | 8/4    | 11 x 11 x 37                      | Opt., Wood Knit | Dark Knit                 | 44      | 1499.00                            |         |  |  |  |  |   |        |                           |              |           |
|                              | Tower Amadeus 120      | Inf. Baf.                        | 8½               | 4½                       | Cone       | ¾                         | Dome  |                          | 28-30         | 91          | 10           | 900,5k                  | 4/8    | 10 x 10 x 33                      | Opt.            | Dark Knit                 | 30      | 799.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Tower Amadeus 200      | Inf. Baf.                        | (2)8½            | 4½                       | Cone       | ¾                         | Dome  |                          | 27-30         | 92          | 10           | 900,5k                  | 8/4    | 11 x 13 x 42                      | Opt.            | Dark Knit                 | 40      | 999.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Monitor 121            | Inf. Baf.                        | 8½               | 4½                       | Cone       | ¾                         | Dome  |                          | 28-32         | 92          | 10           | 500                     |        | 11 x 13 x 20                      | Opt., Wood Knit | Dark Knit                 | 24      | 999.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Bookshelf Monitor 141  | Inf. Baf.                        | 10               | 5                        | Cone       | ¾                         | Dome  |                          | 25-32         | 93          | 10           | 500,5k                  | 8/4    | 13 x 11 x 22                      | Opt., Wood Knit | Dark Knit                 | 30      | 1249.00                            |         |  |  |  |  |   |        |                           |              |           |
|                              | Bookshelf Concept 100  | Vented                           | 7                |                          |            | 1                         | Dome  |                          | 39-22         | 90          | 10           | 2k                      | 8/4    | 9 x 10 x 18                       | Opt.            | Dark Knit                 | 19      | 599.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Bookshelf Concept 120  | Vented                           | 8½               | 4½                       | Cone       | ¾                         | Dome  |                          | 35-22         | 91          | 10           | 900,5k                  | 8/4    | 10 x 11 x 21                      | Opt.            | Dark Knit                 | 24      | 699.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Bookshelf Manhattan 2  | Vented                           | 7                |                          |            | 1                         | Dome  |                          | 40-22         | 90          | 10           | 2k                      | 8/4    | 8 x 12 x 11                       | Opt.            | Dark Metal                | 14      | 499.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | HiTec Manhattan 3      | Vented                           | 8½               | 4½                       | Cone       | ¾                         | Dome  |                          | 38-22         | 91          | 10           | 900,5k                  | 8/4    | 15 x 10 x 11                      | Opt.            | Metal                     | 16      | 649.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Satellite I            | Ported                           | 5                |                          |            | 1                         | Dome  |                          | 68-32         | 89          | 10           | 2k                      | 8/4    | 6 x 10 x 7                        | Opt., Wood Knit | Dark Knit                 | 9       | 649.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Omega                  | Inf. Baf. Sat. & Ported Subwoof. | (2)7             | (2)5½                    | Cones      | (4)2½                     | Cones |                          | 40-20         | 89          | 20           | 180,5k                  | 8/4    | Three Pieces                      | Opt.            | Dark Metal                | 30 Sys. | 798.00                             |         |  |  |  |  |   |        |                           |              |           |
| KLARK-TEKNIK                 | Jade 1 MKII            | Powered Bass Ref.                | 8                |                          |            | 1¼                        | Dome  | W,T                      | 55-17<br>±3   |             | (2) 100 Inc. | 2.5k                    |        | 21 x 16 x 10                      | Black Epoxy     | None                      | 49      | 2295.00                            |         |  |  |  |  |   |        |                           |              |           |
| KLEIN & HUMMEL               | 098                    | Powered                          | 8¼               | 1½                       | Dome       | ¾                         | Dome  | W,M, T                   | 50-16<br>±2.5 |             | Inc.         | 850,6.5k                | 4.7k   | 15 x 10 x 8                       | Brown Enam.     | Brown Knit                | 26½     | 1295.00                            |         |  |  |  |  |   |        |                           |              |           |
|                              | 096                    | Powered                          | 10               | 2                        | Dome       | ¾                         | Dome  | W,M, T                   | 50-20<br>±2.5 |             | Inc.         | 600,4k                  | 4.7k   | 12 x 21 x 11                      | Brown Enam.     | Brown Knit                | 48½     | 2270.00                            |         |  |  |  |  |   |        |                           |              |           |
|                              | 092                    | Powered                          | (2)10            | 3½                       | Cone       | 1                         | Dome  | W,M, T                   | 50-17<br>±2.5 |             | Inc.         | 500,3k                  | 4.7k   | 17 x 32 x 12                      | Brown Enam.     | Brown Knit                | 66      | 4195.00                            |         |  |  |  |  |   |        |                           |              |           |
| KLH                          | Legend 1100            | Ported                           | 8                |                          |            | 2½                        | Cone  |                          | 55-22<br>±9   | 89          | 5            | 4k                      | 8/7    | 22 x 12 x 8                       | Oak Vinyl       | Brown Knit                |         | 260.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Legend 1400            | Ported                           | 10               | 5¼                       | Cone       | 2½                        | Cone  |                          | 49-22<br>±9   | 90          | 5            | 900,4k                  | 8/7    | 27 x 13 x 11                      | Oak Vinyl       | Brown Knit                |         | 380.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Legend 1500            | Ported                           | 12               | 5¼                       | Cone       | 2½                        | Cone  |                          | 42-22<br>±8   | 91          | 5            | 900,4k                  | 8/7    | 31 x 15 x 11                      | Oak Vinyl       | Brown Knit                |         | 440.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Legend 1700            | Pas. Rad.                        | 12               | 5¼                       | Cone       | 2½                        | Cone  |                          | 38-22<br>±8   | 92          | 5            | 900,4k                  | 8/7    | 43 x 15 x 11                      | Oak Vinyl       | Brown Knit                |         | 480.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | Legend 1900            | Ported                           | 15               | 5¼                       | Cone       | 2½                        | Cone  |                          | 35-23<br>±8   | 93          | 5            | 900,4k                  | 8/7    | 33 x 19 x 13                      | Oak Vinyl       | Brown Knit                |         | 520.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 7100                   | Ported                           | 6½               |                          |            | 1                         | Dome  |                          | 50-22<br>±6   | 89          | 5            | 3.5k                    | 8/7    | 17 x 9 x 10                       | Oak Vinyl       | Brown Knit                |         | 280.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 7200                   | Ported                           | 8                |                          |            | 1                         | Dome  |                          | 40-22<br>±6   | 90          | 5            | 3.5k                    | 8/7    | 20 x 12 x 12                      | Oak Vinyl       | Brown Knit                |         | 400.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 7500                   | Ported                           | 12               | 5                        | Cone       | 1                         | Dome  |                          | 24-22<br>±6   | 91          | 5            | 900,3.5k                | 8/7    | 31 x 15 x 10                      | Oak Vinyl       | Brown Knit                |         | 460.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 7700                   | Pas. Rad.                        | 12               | 5                        | Cone       | 1                         | Dome  |                          | 22-22<br>±6   | 92          | 5            | 900,3.5k                | 8/7    | 43 x 15 x 10                      | Oak Vinyl       | Brown Knit                |         | 580.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 7900                   | Ported                           | 15               | 5                        | Cone       | 1                         | Dome  |                          | 20-22<br>±6   | 93          | 5            | 900,3.5k                | 8/7    | 33 x 19 x 13                      | Oak Vinyl       | Brown Knit                |         | 600.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 602                    | Ported                           | 6½               |                          |            | 3                         | Cone  |                          | 50-22<br>±6   | 90          | 8            | 4k                      | 8/7    | 17 x 9 x 10                       | Oak Vinyl       | Brown Knit                |         | 260.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 802                    | Ported                           | 8                |                          |            | 3                         | Cone  |                          | 40-22<br>±6   | 92          | 5            | 4k                      | 8/7    | 20 x 12 x 12                      | Oak Vinyl       | Brown Knit                |         | 400.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | 1203D                  | Ported                           | 12               | 4                        | Dome       | 1                         | Dome  |                          | 24-22<br>±6   | 94          | 3            | 900,4k                  | 8/7    | 31 x 15 x 10                      | Oak Vinyl       | Brown Knit                |         | 500.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | T312D                  | Pas. Rad.                        | 12               | 4                        | Dome       | 1                         | Dome  |                          | 20-22<br>±6   | 96          | 3            | 900,4k                  | 8/7    | 43 x 15 x 10                      | Oak Vinyl       | Brown Knit                |         | 600.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | AV 2000                | Ported                           | 6½               |                          |            | 3                         | Cone  |                          | 50-22<br>±6   | 89          | 5            | 4k                      | 8/7    | 15 x 9 x 9                        | Oak Vinyl       | Brown Knit                |         | 260.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | AV 3000                | Ported                           | 8                |                          |            | 3                         | Cone  |                          | 40-22<br>±6   | 91          | 5            | 4k                      | 8/7    | 18 x 11 x 10                      | Oak Vinyl       | Brown Knit                |         | 400.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | AV 4000                | Ported                           | 12               | 4                        | Cone       | 3                         | Piezo |                          | 24-30<br>±6   | 93          | 5            | 900,4k                  | 8/7    | 30 x 15 x 11                      | Oak Vinyl       | Brown Knit                |         | 500.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | AV 5000                | Pas. Rad.                        | 12               | 4                        | Cone       | 3                         | Piezo |                          | 20-30<br>±6   | 94          | 5            | 900,4k                  | 8/7    | 43 x 15 x 11                      | Oak Vinyl       | Brown Knit                |         | 600.00                             |         |  |  |  |  |   |        |                           |              |           |
|                              | KLIPSCH                | Klipschorn                       | Folded Horn      | 15                       | 2          | Horn                      | 1     | Horn                     |               | 35-17<br>±5 | 104          | 20                      | 400,6k | 8/4                               | 52 x 34 x 29    | Opt.                      | Opt.    | 185                                | 1744.00 |  |  |  |  |   |        |                           |              |           |
| Belle Klipsch                |                        | Folded Horn                      | 15               | 2                        | Horn       | 1                         | Horn  |                          | 45-17<br>±5   | 104         | 20           | 500,6k                  | 8/4    | 36 x 30 x 19                      | Opt.            | Opt.                      | 133     | 1429.00                            |         |  |  |  |  |   |        |                           |              |           |
| La Scala                     |                        | Folded Horn                      | 15               | 2                        | Horn       | 1                         | Horn  |                          | 45-17<br>±5   | 104         | 20           | 400,6k                  | 8/4    | 36 x 24 x 25                      | Birch           |                           | 130     | 938.00                             |         |  |  |  |  |   |        |                           |              |           |
| Cornwall II                  |                        | Bass. Ref.                       | 15               | 1½                       | Horn       | 1                         | Horn  |                          | 38-20<br>±3   | 101         | 20           | 600,6k                  | 8/4    | 36 x 26 x 16                      | Opt.            | Opt.                      | 100     | 819.00                             |         |  |  |  |  |   |        |                           |              |           |
| Chorus                       |                        | Bass Ref.                        | 15               | 1½                       | Horn       | 1                         | Horn  |                          | 45-20<br>±3   | 101         | 20           | 600,6k                  | 8/4    | 39 x 15 x 19                      | Opt.            | Opt.                      | 89      | 815.00                             |         |  |  |  |  |   |        |                           |              |           |
| (Continued)                  |                        |                                  |                  |                          |            |                           |       |                          |               |             |              |                         |        |                                   |                 |                           |         |                                    |         |  |  |  |  |   |        |                           |              |           |

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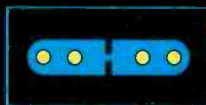


# LOUDSPEAKERS

| MANUFACTURER        | Model           | Design Principle       | Enclosure or System Type |                           |               |                          | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer, W. Midrange - M, Tweeter = T Super Tweeter = ST | Analogous Frequency Response, Hz to kHz, ± dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs.   | Price, \$ |
|---------------------|-----------------|------------------------|--------------------------|---------------------------|---------------|--------------------------|--------------------------|--------------|--|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------|---------------------------|----------------|-----------|
|                     |                 |                        | Woofer Diameter, Inches  | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches |                          |              |  |   |                         |                                   |                           |                                  |                                      |             |                           |                |           |
| KLIPSCH (Continued) | Forte II        | Pas. Rad.              | 12                       | 1½                        | Horn          | 1                        | Horn                     |              | 32-20 ± 3  | 98  | 20                      | 650,6k                            | 8/4                       | 35 x 12 x 17                     | Opt.                                 | Opt.        | 65                        | 649.00         |           |
|                     | Heresy II       | Inf. Baf.              | 12                       | 1½                        | Horn          | 1                        | Horn                     |              | 50-20 ± 3  | 96  | 20                      | 700,6k                            | 8/4                       | 21 x 16 x 13                     | Opt.                                 | Opt.        | 50                        | 464.00         |           |
|                     | KG4             | Pas. Rad.              | (2)8                     |                           |               | 1                        | Horn                     |              | 38-20 ± 3  | 94  | 30                      | 1.8k                              | 6/4                       | 28 x 11 x 16                     | Opt.                                 | Opt.        | 45                        | 339.00         |           |
|                     | KG2             | Pas. Rad.              | 8                        |                           |               | 1                        | Dhorn                    |              | 38-20 ± 3  | 90.5  | 30                      | 1.8k                              | 4/4                       | 19 x 12 x 13                     | Opt.                                 | Opt.        | 25                        | 238.00         |           |
| KNI                 | 331             | Inf. Baf.              | 8                        | 3½                        | Cone          | 3                        | Dome                     |              | 28-20 ± 3  | 90  | 50                      | 900,4.5k                          | 8/                        | 31 x 12 x 12                     | Oak Ven.                             | Black       | 59                        | 999.00 Pair    |           |
|                     | 320             | Rear Ported            | 8                        | 3¼                        | Cone          | 2½                       | Dome                     |              | 35-20 ± 3  | 92  | 25                      | 900,4.5k                          | 8/                        | 20 x 12 x 12                     | Oak Ven.                             | Black       | 34                        | 599.00 Pair    |           |
|                     | 231             | Inf. Baf.              | 8                        |                           | Dome          | ¾                        | Dome                     |              | 30-20 ± 3  | 88  | 50                      | 5k                                | 8/                        | 31 x 12 x 12                     | Oak Ven.                             | Black       | 60                        | 799.00 Pair    |           |
|                     | 213             | Rear Ported            | 8                        |                           | Dome          | ¾                        | Dome                     |              | 35-20  | 90  | 25                      | 5k                                | 8/                        | 13 x 12 x 12                     | Oak Ven.                             | Black       | 30                        | 399.00 Pair    |           |
| KORT                | CC-B            | Trans. Line            | 4                        |                           |               |                          |                          |              | 100-18   | 84  | 5                       |                                   | 8/7.5                     | 16 x 5 x 9                       | Opt.                                 | Opt., Metal | 12                        | 235.00 Pair    |           |
|                     | CC-Dne a        | Trans. Line            | 10                       |                           | (2)3          | Cones                    |                          |              | 30-20  | 92  | 60                      | 900                               | 4/4                       | 31 x 11 x 35                     | Opt.                                 | Opt., Metal | 90                        | 1010.00 Pair   |           |
|                     | Proxy 2         | Trans. Line, Ac. Sus.  | (2)15                    |                           | (5)2          | Cones                    |                          |              | 17-22  | 95  | 100                     | 450                               | 4/1.5                     | Four Pieces                      | Opt.                                 | Opt., Metal | 800 Sys.                  | 4500.00 Sys.   |           |
| KOSS                | M/100 Plus      | Powered Bass Ref.      | (2)4½                    |                           |               | 1                        | Dome                     |              | 50-30  |   | Inc.                    | 2.5k                              |                           | 15 x 6 x 12                      | Wal. Vinyl                           | Brown Knit  | 27 Pair                   | 259.95 Pair    |           |
|                     | M/90 Plus       | Bass Ref.              | (2)4½                    |                           |               | 1                        | Dome                     |              | 50-30  | 88  | 10                      | 2.5k                              | 6/4                       | 15 x 6 x 12                      | Wal. Vinyl                           | Brown Knit  | 15                        | 219.95 Pair    |           |
|                     | M/80 Plus       | Ac. Sus.               | (2)4½                    |                           |               | 1                        | Dome                     |              | 50-30  | 86  | 10                      | 2.5k                              | 6/4.5                     | 13 x 5 x 6                       | Wal. Vinyl                           | Brown Knit  | 8                         | 189.95 Pair    |           |
|                     | M/60 Plus       | Ac. Sus.               | 4½                       |                           |               | 1                        | Dome                     |              | 100-30   | 84  | 10                      | 2.25k                             | 8/6                       | 8 x 5 x 6                        | Wal. Vinyl                           | Brown Knit  | 4.9                       | 134.95 Pair    |           |
| LAKESHORE IMPORTS   | Kassel XII      | Powered                | 10                       | 5                         | Dome          | 1                        | Dome                     | W,M,T        | 20-30 ± 3  |   | Inc.                    | 350,3.5k                          | 4/                        | 36 x 12 x 13                     | Opt.                                 | Opt., Cloth | 160                       | 17,000.00 Pair |           |
|                     | Kiser III       | Vented                 | 7,11                     | 1½                        | Dome          | 1                        | Dome                     |              | 18-30 ± 3  |   |                         | 250,1.1k, 4.6k                    | 4/                        | 48 x 18 x 14                     | Opt.                                 | Opt., Cloth | 130                       | 12,200.00 Pair |           |
|                     | Joanne I        | Vented                 | 10                       | 5                         | Cone          | 1                        | Dome                     |              | 18-30 ± 3  |   |                         | 450,4k                            | 4/                        | 41 x 14 x 15                     | Opt.                                 | Opt., Cloth | 88                        | 5800.00 Pair   |           |
|                     | Molli V         | Ac. Sus.               | 12                       | 4¾                        | Cone          | 1                        | Dome                     |              | 30-25 ± 3  |   |                         | 450,3k                            | 4/                        | 49 x 36 x 24                     | Opt.                                 | Opt., Cloth | 57                        | 4600.00 Pair   |           |
|                     | Barnett X       | Ac. Sus.               | 10                       | 1½                        | Dome          | 1                        | Dome                     |              | 25-23 ± 3  |   |                         | 450,3k                            | 4/                        | 32 x 24 x 16                     | Opt.                                 | Opt., Metal | 52                        | 3800.00 Pair   |           |
|                     | Slack-master    | Ac. Sus.               | 7                        |                           |               | 1                        | Dome                     |              | 42-30 ± 3  |   |                         | 1.7k                              | 4/                        | 13 x 10 x 6                      | Black                                | Black Metal | 12 Pair                   | 900.00         |           |
| LANCER ELECTRONICS  | LE-25           | Vented                 | 4                        |                           |               | ¾                        | Dome                     |              | 55-20  | 87  | 10                      | 3.5k                              | 8/6                       | 8 x 8 x 10                       | Opt., Wood                           | Black Knit  | 7½                        | 110.00         |           |
|                     | LE-50           | Vented                 | 6½                       |                           |               | ¾                        | Dome                     |              | 49-20  | 88  | 10                      | 3k                                | 4/4                       | 9 x 8 x 14                       | Opt., Wood                           | Black Knit  | 12                        | 125.00         |           |
|                     | LE-75           | Vented                 | (2)6½                    |                           |               | 1                        | Dome                     |              | 42-20  | 89  | 15                      | 3.2k                              | 8/5                       | 8 x 10 x 28                      | Opt., Wood                           | Black Knit  | 32                        | 250.00         |           |
|                     | LE-110          | Vented                 | 10                       | 4                         | Cone          | 1                        | Dome                     |              | 32-20  | 89  | 25                      | 800,4k                            | 8/6                       | 15 x 11 x 26                     | Oak Ven.                             | Black Knit  | 45                        | 350.00         |           |
|                     | LE-150          | Vented                 | 10                       | 4                         | Cone          | 1                        | Dome                     |              | 28-20  | 89  | 25                      | 800,4k                            | 8/6                       | 14 x 11 x 39                     | Oak Ven.                             | Black Knit  | 48                        | 400.00         |           |
| LANTANA             | TAD             | Vented                 | (2)4½                    |                           |               | 2                        | Cone                     | T            | 50-22 ± 3  | 91  | 40                      | 2k                                | 6/4                       | 17 x 6 x 7                       | Opt., Wood                           | Opt., Knit  | 12½                       | 450.00 Pair    |           |
|                     | Laug Mono       | Vented Mono Subwoof.   | (2)8                     |                           |               |                          |                          |              | 25-90 ± 3  |   | 40                      | 90                                | 6/4                       | 33 x 11 x 12                     | Opt., Wood                           | Opt., Knit  | 47                        | 450.00         |           |
|                     | Laug Stereo     | Vented Stereo Subwoof. | (2)8                     |                           |               |                          |                          |              | 25-90 ± 3  |   | 40                      | 90                                | 8/4                       | 33 x 11 x 12                     | Opt., Wood                           | Opt., Knit  | 49                        | 500.00         |           |
|                     | Mink            | Vented                 | (2)8                     | (2)4½                     |               | 2                        | Cone                     | T            | 30-22 ± 3  | 90  | 40                      | 90,2k                             | 6/4                       | 36 x 9 x 9                       | Opt., Wood                           | Opt., Knit  | 54                        | 575.00         |           |
| LASER AUDIO         | FXT-6           | Ported Reflex          | 6                        |                           |               | 1                        | Dome                     |              | 40-20 ± 3  | 91  | 15                      |                                   | 8/4                       | 15 x 9 x 10                      | Black Ebony                          | Black Knit  |                           | 400.00 Pair    |           |
|                     | FXT-8 MK VII    | Ported Reflex          | 8                        |                           |               | 1                        | Dome                     |              | 35-20 ± 3  | 92  | 15                      |                                   | 8/4                       | 19 x 10 x 11                     | Black Ebony                          | Black Knit  |                           | 500.00 Pair    |           |
|                     | Reference 1000  | Ac. Sus.               | 10                       | 6                         | Cone          | 1                        | Dome                     |              | 25-20 ± 3  | 97  | 15                      |                                   | 8/4                       | 35 x 15 x 16                     | Oak & Ebony                          | Black Knit  |                           | 1200.00 Pair   |           |
|                     | Reference 1200  | Ac. Sus.               | 12                       | 8                         | Cone          | 1                        | Dome                     |              | 22-20 ± 3  | 97  | 15                      |                                   | 8/4                       | 36 x 13 x 16                     | Oak & Ebony                          | Black Knit  |                           | 1500.00 Pair   |           |
| LEGACY              | Signature II    | Bipolar, Slot Loaded   | (3)10                    | (2)6½, 1¼                 | Cones, Dome   | ½x4, 1                   | Ribbon, Dome             | M,T          | 20-30 ± 2  | 95  | 30                      | 100,2k, 8.5k                      | 4/4                       | 50 x 12 x 13                     | Opt., Wood                           | Opt., Knit  | 140                       | 2696.00 Pair   |           |
|                     | 1               | Slot Loaded            | 8,10                     | 6½, 1¼                    | Cone, Dome    | ½x4                      | Ribbon                   | M,T          | 22-30 ± 2  | 91.5  | 45                      | 120,2.2k, 8.5k                    | 8/4                       | 44 x 12 x 13                     | Opt., Wood                           | Opt., Knit  | 100                       | 1696.00 Pair   |           |
|                     | 2 Plus          | Vented, QBS            | 10                       | 6½                        | Cone          | 1                        | Dome                     | M,T          | 28-22 ± 2  | 91  | 30                      | 180,2.6k                          | 8/4                       | 40 x 12 x 11                     | Opt., Wood                           | Opt., Knit  | 88                        | 1196.00 Pair   |           |
|                     | 2               | Vented, Fourth Order   | 10                       | 6½                        | Cone          | 1                        | Dome                     | T            | 33-22 ± 2  | 90  | 30                      | 180,2.8k                          | 8/4                       | 40 x 12 x 11                     | Opt., Wood                           | Opt., Knit  | 80                        | 996.00 Pair    |           |
|                     | 3               | Double Reflex          | 8                        | 6½                        | Cone          | 1                        | Dome                     | T            | 36-22 ± 2  | 91  | 30                      | 200,2.8k                          | 4/4                       | 37 x 12 x 10                     | Opt., Wood                           | Opt., Knit  | 70                        | 896.00 Pair    |           |
|                     | Super Satellite | Symmetrical Array      | (2)6½                    |                           |               | 1                        | Dome                     | T            | 38-22 ± 2  | 95  | 30                      | 2.6k                              | 4/4                       | 20 x 11 x 10                     | Opt., Wood                           | Opt., Knit  | 40                        | 748.00 Pair    |           |
|                     | Satellite       | QBS Aided              | 6½                       |                           |               | 1                        | Dome                     | T            | 40-22 ± 2  | 90  | 30                      | 2.6k                              | 8/8                       | 13 x 11 x 10                     | Opt., Wood                           | Opt., Knit  | 32                        | 528.00 Pair    |           |
|                     | Mini Monitor    | QBS Aided              | 5¼                       |                           |               | 1                        | Dome                     | T            | 59-22 ± 2  | 90  | 30                      | 2.6k                              | 4/4                       | 9 x 7 x 7                        | Opt., Wood                           | Opt., Knit  | 16                        | 428.00 Pair    |           |
| (Continued)         |                 |                        |                          |                           |               |                          |                          |              |  |   |                         |                                   |                           |                                  |                                      |             |                           |                |           |

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# LOUDSPEAKERS

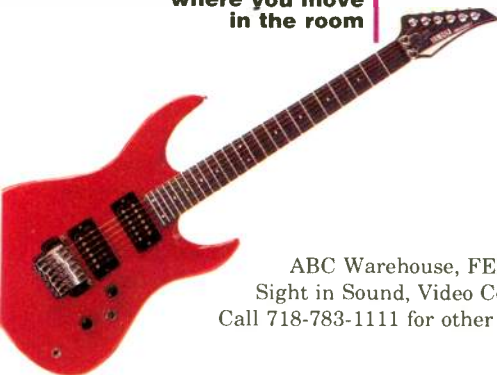
| MANUFACTURER                 | Model               |                                       | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type    | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Super-tweeter = ST | Anechoic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$ |
|------------------------------|---------------------|---------------------------------------|--|-------------------------|---------------------------|---------------|--------------------------|-----------------|--|--|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|-------------|---------------------------|--------------|-----------|
|                              |                     |                                       |  |                         |                           |               |                          |                 |  |  |                         |                                   |                           |                                 |                                      |             |                           |              |           |
| LEGACY (Continued)           | Dual 10 Subwoofer   | Vented, Fourth Order Subwoof.         | (2)10                                      |                         |                           |               |                          | W               | 24-120 $\pm$ 2   | 91   | 30                      | Var.                              | 8/8                       | 24 x 16 x 16                    | Opt., Wood                           | Opt., Knit  | 90                        | 548.00       |           |
|                              | Dual 12 Subwoofer   | Vented, Fifth Order Subwoof.          | (2)12                                      |                         |                           |               |                          | W               | 16-100 $\pm$ 2   | 91.5   | 30                      | Var.                              | 4/4                       | 27 x 16 x 16                    | Opt., Wood                           | Opt., Knit  | 100                       | 748.00       |           |
|                              | Amplified Subwoofer | Powered, Vented, Sixth Order Subwoof. | (2)12                                      |                         |                           |               |                          | W               | 16-100 $\pm$ 2   | 99   | 250 Inc.                | Var.                              |                           | 27 x 16 x 16                    | Opt., Wood                           | Opt., Knit  | 115                       | 1096.00      |           |
| LINAUM                       | LT-1000             | Trans. Line                           | 8  |                         | (1)                       |               | M, T                     |                 | 89   | 30   | 150                     | 4/3                               | 11 x 12 x 40              | Opt.                            | Opt., Knit                           | 66          | 1695.00 Pair              |              |           |
|                              | LS-1000             | Ac. Sus.                              | 8  |                         | (1)                       |               | M, T                     |                 | 88   | 30   | 150                     | 4/3                               | 11 x 8 x 41               | Opt.                            | Opt., Knit                           | 54          | 1295.00 Pair              |              |           |
|                              | LM-1000             | Ac. Sus.                              | 6½   |                         | (1)                       |               | M, T                     |                 | 88   | 30   | 150                     | 4/3                               | 11 x 8 x 19               | Opt.                            | Opt., Knit                           | 52 Pair     | 850.00 Pair               |              |           |
|                              | 4                   | Ac. Sus.                              | (2)8                                       |                         | (4)                       |               | M, T                     |                 | 85   | 60   | 100                     | 4/2.5                             | 29 x 10 x 52              | Opt.                            | Opt., Knit                           | 135         | 6400.00 Pair              |              |           |
| LINN HI-FI                   | Helix LS150         | Ported                                | 8  |                         | ¾                         | Dome          |                          | 55-18 $\pm$ 3   | 88   |  | 3k                      | 8/7                               | 20 x 10 x 11              | Black Ash                       | Black Knit                           | 22          | 795.00 Pair               |              |           |
|                              | Nexus LS250         | Ported                                | 8  |                         | ¾                         | Dome          |                          | 50-20 $\pm$ 2.5 | 88   |  | 2.5k                    | 8/7                               | 22 x 10 x 12              | Black Ash                       | Black Knit                           | 22          | 1095.00 Pair              |              |           |
|                              | DMS Isobarik        | Isobarik                              | (2) 9x12 (2)8                              | (2)5                    | Cones                     | (2)¾          | Domes                    | 25-20 $\pm$ 3   | 86   | 50   | 375,3k                  | 4/3                               | 17 x 15 x 30              | Black Ash Teak                  | Black Foam                           | 95          | 5385.00 Pair              |              |           |
|                              | SARA Isobarik Kan   | Isobarik                              | 5  |                         | ¾                         | Dome          |                          | 36-20 $\pm$ 3   | 86   | 35   | 1.5k                    | 4/3                               | 17 x 14 x 10              | Teak                            | Black Foam                           | 31          | 1795.00 Pair              |              |           |
|                              | Index               | Inf. Baf.                             | 8  |                         | ¾                         | Dome          |                          | 70-20 $\pm$ 3   | 86   | 15   | 3k                      | 8/6                               | 8 x 6 x 12                | Teak                            | Black Cloth                          | 11          | 785.00 Pair               |              |           |
|                              | Kaber               | Inf. Baf.                             | (2)5                                       |                         | ¾                         | Dome          |                          | 60-20 $\pm$ 3   | 86   | 10   | 2k                      | 8/6                               | 17 x 11 x 8               | Black                           | Black Cloth                          | 17          | 595.00 Pair               |              |           |
|                              |                     |                                       |  |                         |                           |               |                          | 60-20 $\pm$ 3   | 86   | 30   | 200,3k                  | 8/6                               | 7 x 10 x 35               | Opt.                            | Black Knit                           | 59          | 1995.00 Pair              |              |           |
| LUXMAN                       | S-505               | In-Wall                               | 8  |                         | 1                         | Dome          | T                        | 50-22 $\pm$ 2.5 | 89   | 20   | 3k                      | 8/5.6                             | 14 x 10 x 3               | White                           | White                                | 6½          | 500.00 Pair               |              |           |
| MADISOUND                    | Phoenix             | Sealed Box                            | 10   | 5                       | Cone                      | ¾             | Dome                     | 35-18           | 88   | 50   | 500,5k                  | 8/5                               | 15 x 25 x 12              | Nat. Oak                        | Brown Knit                           | 40          | 700.00 Pair; Kit, 500.00  |              |           |
|                              | Sledgling           | Sealed                                | 6½   |                         | ¾                         | Dome          |                          |                 | 90   |  | 3.2k                    | 4/3.5                             | 9 x 12 x 6                | Oiled Wal. Oak                  | Brown Knit                           |             | 300.00 Pair               |              |           |
|                              | The Movie           | Sealed                                | 12   | (2)6                    | Cones                     | 1             | Dome                     |                 | 95   | 50   | 400,6k                  | 8/6                               | Four Pieces               |                                 | Brown Knit                           |             | 1500.00 Pair              |              |           |
|                              | Thallic             | Sat. & Sealed Subwoof.                | 12   | 6                       | Cone                      | ¾             | Dome                     |                 | 88   | 100  | 100,4k                  | 4/3.5                             | Three Pieces              | Oak                             | Brown Knit                           |             | 900.00 Sys.               |              |           |
| MAGNEPAN                     | SMGa                | Planar Mag. Dipole                    | 370 Sq. In.                                |                         | Planar Mag.               | 58 Sq. In.    | Planar Mag.              | 50-18 $\pm$ 4   | 85   | 40   | 2.4k                    | 4/4                               | 19 x 49 x 2               | Oak                             | Opt.                                 | 60 Pair     | 495.00 Pair               |              |           |
|                              | MG 1.4              | Planar Mag. Dipole                    | 428 Sq. In.                                |                         | Planar Mag.               | 68 Sq. In.    | Planar Mag.              | 40-18 $\pm$ 3   | 87   | 50   | 1k                      | 5/5                               | 22 x 60 x 2               | Oak                             | Opt.                                 | 85 Pair     | 980.00 Pair               |              |           |
|                              | MG 2.5/R            | Planar Mag. Dipole                    | 609 Sq. In.                                |                         | Planar Mag.               | 9 Sq. In.     | Ribbon                   | 37-40 $\pm$ 3   | 84   | 50   | 800                     | 5/3.5                             | 22 x 71 x 2               | Oak                             | Opt.                                 | 105 Pair    | 1695.00 Pair              |              |           |
|                              | MG IIIa             | Planar Mag. Dipole                    | 620 Sq. In.                                | 170 Sq. In.             | Planar Mag.               | 13¾ Sq. in.   | Ribbon                   | 37-40 $\pm$ 3   | 85   | 75   | 300,500                 | 4/3.5                             | 23 x 72 x 2               | Oak                             | Opt.                                 | 130 Pair    | 2195.00 Pair              |              |           |
|                              | Tympani IVa         | Planar Mag. Dipole                    | 1254 Sq. In.                               | 168 Sq. In.             | Planar Mag.               | 13¾ Sq. in.   | Ribbon                   | 30-40 $\pm$ 3   | 87   | 100  | 250,400                 | 4/3.5                             | Six Panels                | Oak                             | Opt.                                 | 260 Sys.    | 3750.00 Sys.              |              |           |
| MARANTZ                      | SP2006              | Ac. Sus.                              | 6½   |                         | 1                         | Dome          | No                       |                 |  |  |                         |                                   |                           | Wal.                            |                                      |             | 299.95 Pair               |              |           |
|                              | SP2008              | Ac. Sus.                              | 8  |                         | 1                         | Dome          | No                       |                 |  |  |                         |                                   |                           | Wal.                            |                                      |             | 399.95 Pair               |              |           |
|                              | SP208               | Ac. Sus.                              | 8  |                         | 2                         | Cone          | No                       |                 |  |  |                         |                                   |                           | Wal.                            |                                      |             | 119.95 Pair               |              |           |
|                              | SP800               | Ac. Sus.                              | 8  | 4                       | Cone                      | 2             | Cone                     |                 |  |  |                         |                                   |                           | Wal.                            |                                      |             | 139.95 Pair               |              |           |
|                              | SP2368              | Ac. Sus.                              | 8  |                         |                           |               |                          |                 |  |  |                         |                                   |                           |                                 |                                      |             | 129.95 Pair               |              |           |
|                              | LSP28               | Ac. Sus.                              | 8  |                         | 1                         | Dome          | No                       | 40-20           |  |  |                         |                                   |                           |                                 |                                      |             | 339.95 Pair               |              |           |
|                              | SP1000              | Ported                                | 10   | 4                       | Cone                      | 2             | Cone                     | 40-20           | 89   |  |                         | 8/                                | 27 x 13 x 11              | Black Lacq. Wal.                | Black Knit                           |             | 199.95 Pair               |              |           |
|                              | SP1200              | Ported                                | 12   | 4                       | Cone                      | 2             | Cone                     | 25-20           | 90   |  |                         | 8/                                | 30 x 15 x 12              | Vinyl Wal.                      | Black                                |             | 239.95 Pair               |              |           |
|                              | SP1515              | Ported                                | 15   | 5                       | Cone                      | 2             | Cone                     | 18-20           | 90   |  |                         | 8/                                | 30 x 17 x 13              | Vinyl Wal.                      | Black                                |             | 359.95 Pair               |              |           |
| SP2005                       | Ac. Sus.            | 5¼                                    |  | 1                       | Cone                      |               |                          |                 |  |  |                         |                                   | Vinyl Wal.                |                                 |                                      | 199.95 Pair |                           |              |           |
| MARIAH ACOUSTICS (Continued) | Thimble             | Ac. Sus.                              | 6½   |                         | 1                         | Dome          |                          | 55-20 $\pm$ 3   |  | 20   |                         | 5/                                | 10 Dia. x 16              | Lacq. Oak                       | Opt., Knit                           | 40 Pair     | 398.00 Pair               |              |           |

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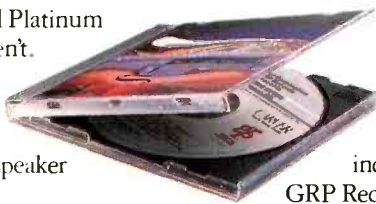
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# LOUDSPEAKERS

| MANUFACTURER                 | Model                       |                             | Design Principle | Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer, W, Midrange, M, Tweeter, T, Subwoofer, ST | Anechoic Frequency Response, Hz to kHz, ± dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$      |
|------------------------------|-----------------------------|-----------------------------|------------------|--------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|--|--|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------|---------------------------|--------------|----------------|
| MARIAH ACOUSTICS (Continued) | L.S. #4III                  | Bass Ref.                   | 8                |                          |                         | 1                         | Dome          |                          |              |  | 45-20 ±3                                     | 20                      |                                   | 5/                        | 12 Dia. x 23                     | Lacq. Oak                            | Opt., Knit  |                           | 50           | 498.00 Pair    |
|                              | L.S. #3II                   | Bass Ref.                   | 10               |                          |                         | 1                         | Dome          |                          |              |  | 38-20  | 30                      |                                   | 6/                        | 14 Dia. x 36                     | Lacq. Oak                            | Opt., Knit  |                           | 50           | 698.00 Pair    |
|                              | L.S. #2II                   | Bass Ref.                   | (2)8             |                          |                         | 1                         | Dome          |                          |              |  | 35-20  | 30                      |                                   | 8/                        | 14 Dia. x 34                     | Lacq. Oak                            | Opt., Knit  |                           | 50           | 898.00 Pair    |
|                              | Illusion                    | Bass Ref.                   | 8                |                          |                         | 1                         | Dome          |                          |              |  | 40-20  | 30                      |                                   | 4/                        | 12 Dia. x 34                     | Lacq. Oak                            | Opt., Knit  |                           | 55           | 998.00 Pair    |
| MARTIN-LOGAN                 | The Statement               | ES & Woofer                 | (4)12            |                          |                         | 36x72                     | ES            | W,T                      |              |  | 16-25 ±2                                     | 93                      | 200                               | 100                       | 6/3                              | Two Pieces Per Side                  | Opt.        | Opt.                      | 2000 Sys.    | 35,000.00 Sys. |
|                              | The Monolith II             | ES & Woofer                 | 12               |                          |                         | 24x48                     | ES            |                          |              |  | 27-22 ±2                                     | 90                      | 50                                | 100                       | 6/3                              | 26 x 74 x 12                         | Opt.        | Opt.                      | 350 Pair     | 5500.00 Pair   |
|                              | The CLS II                  | ES & Woofer                 | 24x48            |                          |                         |                           |               |                          |              |  | 35-22 ±2                                     | 85                      | 100                               |                           | 6/1.5                            | 28 x 58 x 14                         | Opt.        |                           | 150 Pair     | 3500.00 Pair   |
|                              | The Sequel II               | ES & Woofer                 | 10               |                          |                         | 12x48                     | ES            |                          |              |  | 27-22 ±2                                     | 88                      | 50                                | 200                       | 6/2                              | 14 x 72 x 13                         | Opt.        |                           | 210 Pair     | 2500.00 Pair   |
| MASTERCRAFT AUDIO            | Sound Panels SP-MK 1        | Ac. Sus.                    | 8                |                          |                         | 1                         | Dome          | T                        |              |  | 40-22 ±3                                     | 89                      | 30                                | 3.1k                      | 8/                               | 12 x 6 x 26                          | Black Oak   | Black Knit                | 58 Pair      | 899.00 Pair    |
|                              | Sound Panels SP-MK 2        | Ac. Sus.                    | (2)8             |                          |                         | 1, 1/4                    | Dome, Piezo   | T                        |              |  | 37-27 ±3                                     | 91                      | 30                                | 3k                        | 4/                               | 30 x 15 x 8                          | Black Oak   | Black Knit                | 88 Pair      | 1250.00 Pair   |
|                              | Black Box                   | Ac. Sus.                    | 8                |                          |                         | 1                         | Dome          |                          |              |  | 45-22 ±3                                     | 91                      | 10                                | 3.1k                      | 8/                               | 14 x 10 x 8                          | Black Oak   | Black Knit                | 42 Pair      | 449.00 Pair    |
|                              | Music Monitor SW-1          | Ac. Sus.                    | 10               |                          |                         | 1                         | Dome          |                          |              |  | 38-21 ±3                                     | 92                      | 15                                | 2.5k                      | 8/                               | 15 x 26 x 11                         | Black Oak   | Black Knit                | 60 Pair      | 559.00 Pair    |
|                              |                             | Ac. Sus. Subwoof.           | 12               |                          |                         |                           |               | W                        |              |  | 28-90 ±3                                     | 89                      | 50                                | 90                        | 8/                               | 30 x 15 x 10                         | Black Oak   | Black Knit                | 42 Pair      | 589.00 Pair    |
| MAVRICK                      | Nonspeaker Ribbon Monitor   | Pressure Release            | 6                |                          |                         |                           | Ribbon        |                          |              |  | 40-40 ±4                                     | 91                      | 10                                |                           | 7/5                              | 8 x 13 x 17                          | Oak         |                           |              | 2000.00 Pair   |
|                              | Nonspeaker Ribbon System    | Trans. Line                 | 12               | 6                        | Cone                    |                           | Ribbon        |                          |              |  | 18-40 ±3                                     | 91                      | 30                                |                           | 8/5                              | Three Pieces                         | Oak         | Black Knit                |              | 3000.00 Sys.   |
|                              | Nonspeaker Ribbon Reference | Trans. Line & Dipole        | 12               |                          | Ribbon                  |                           | Ribbon        |                          |              |  | 18-40 ±2                                     | 92                      | 30                                |                           | 8/5                              | Four Pieces                          | Zebra Wood  | Black Knit                |              | 4800.00 Sys.   |
|                              | Nonspeaker Ribbon Ultimate  | Trans. Line & Dipole        | 12               |                          | Ribbon                  |                           | Ribbon        |                          |              |  | 18-40 ±1                                     | 92                      | 30                                |                           | 8/5                              | Four Pieces                          | Zebra Wood  | Black Knit                |              | 11,000.00 Sys. |
| MB QUART ELECTRONICS         | Quart 220                   | Inf. Bat.                   | 6½               |                          |                         | 1                         | Dome          |                          |              |  | 58-32  | 87                      | 25                                | 1.5k                      | 4/                               | 9 x 12 x 9                           | Opt.        | Opt.                      | 12           | 449.00 Pair    |
|                              | Quart 280                   | Inf. Bat.                   | 8                |                          |                         | 1                         | Dome          |                          |              |  | 50-32  | 88                      | 25                                | 1.5k                      | 4/                               | 11 x 17 x 11                         | Opt.        | Opt.                      | 22           | 599.00 Pair    |
|                              | Quart 390                   | Inf. Bat.                   | 10               | 4                        | Cone                    | 1                         | Dome          |                          |              |  | 40-32  | 88                      | 40                                | 400, 1.8k                 | 4/                               | 12 x 21 x 12                         | Opt.        | Opt.                      | 28           | 939.00 Pair    |
|                              | Quart 350S                  | Vented                      | 8                |                          |                         | 1                         | Dome          |                          |              |  | 38-32  | 89                      | 40                                | 1.5k                      | 4/                               | 10 x 32 x 11                         | Opt.        | Opt.                      | 40           | 1059.00 Pair   |
|                              | Quart 650S                  | Inf. Bat.                   | 8                | 2                        | Dome                    | 1                         | Dome          |                          |              |  | 35-32  | 87                      | 45                                | 400, 2.9k                 | 4/                               | 10 x 34 x 11                         | Opt.        | Opt.                      | 40           | 1579.00 Pair   |
|                              | Quart 980S                  | Inf. Bat.                   | (2)8             | 2                        | Dome                    | 1                         | Dome          |                          |              |  | 34-32  | 87                      | 60                                | 350, 500, 2.9k            | 4/                               | 11 x 39 x 11                         | Opt.        | Opt.                      | 57           | 2649.00 Pair   |
|                              | Quart 310 Sub-Woofer        | Inf. Bat. Subwoof.          | 12               |                          |                         |                           |               |                          |              |  | 25-150                                       | 87                      | 70                                | 100                       | 4/                               | 15 x 19 x 14                         | Opt.        | Opt.                      | 40           | 899.00 Pair    |
| McINTOSH                     | XRT22                       | Inf. Bat.                   | (2)12            | 8                        | Cone                    | (23)1                     | Domes         |                          |              |  | 20-20  | 89                      | 30                                | 100, 250, 1.5k            | 8/                               | Two Pieces Per Side                  | Opt., Wood  | 258 Side                  | 4250.00 Side |                |
|                              | XRT18                       | Inf. Bat.                   | 12               | 6                        | Cone                    | (16)1                     | Domes         |                          |              |  | 20-20  | 86                      | 30                                | 350, 1.5k                 | 8/                               | Two Pieces Per Side                  | Opt., Wood  | 108 Side                  | 2250.00 Side |                |
|                              | XR1052                      | Pas. Rad.                   | 10               | 5                        | Cone                    | 1                         | Dome          |                          |              |  | 30-20  | 82                      | 30                                | 55, 450, 1.3k             | 8/                               | 47 x 16 x 11                         | Wal.        | Black                     | 83           | 1250.00        |
|                              | XD717                       | Inf. Bat.                   | 12               | 6½                       | Cone                    | 1                         | Dome          |                          |              |  | 30-20  | 87                      | 30                                | 350, 1k                   | 8/                               | 38 x 18 x 12                         | Wal.        | Black                     | 66           | 799.00         |
|                              | XD715                       | Inf. Bat.                   | 10               | 5                        | Cone                    | 1                         | Dome          |                          |              |  | 30-20  | 86                      | 30                                | 375, 1k                   | 8/                               | 30 x 15 x 10                         | Wal.        | Black                     | 43           | 599.00         |
|                              | XL10                        | Pas. Rad.                   | 8                |                          |                         | 1                         | Dome          |                          |              |  | 45-20  | 89                      | 30                                | 90, 1k                    | 8/                               | 25 x 14 x 8                          | Wal.        | Black                     | 25½          | 429.00         |
|                              | XL1                         | Inf. Bat.                   | 6                |                          |                         | 1                         | Dome          |                          |              |  | 70-20  | 85                      | 30                                | 1k                        | 8/                               | 13 x 8 x 7                           | Wal.        | Black                     | 15           | 525.00 Pair    |
| MEMOREX                      | Series 10                   |                             | 4                |                          |                         | 1                         | Dome          |                          |              |  | 50-20  | 82                      |                                   | 2.5k                      | 8/5                              | 7 x 4 x 4                            | Opt., Metal |                           |              |                |
| MERIDIAN                     | D600 (With remote control)  | Powered, Triamp, Vented     | (2)6½            |                          |                         | 1                         | Dome          |                          |              |  | 36-20 ±3                                     | Inc.                    | 2.5k                              |                           |                                  | 36 x 8 x 12                          | Opt., Wood  | Black Knit                | 71           | 5490.00 Pair   |
|                              | M100                        | Powered, Quadamp, Pas. Rad. | (4)4½            | (2)4½                    | Cones                   | 1                         | Dome          |                          |              |  | 34-20 ±3                                     | Inc.                    | 500, 2.5k                         |                           |                                  | 40 x 8 x 19                          | Opt., Wood  | Black Knit                | 99           | 6990.00 Pair   |
|                              | M60                         | Powered, Triamp, Vented     | (2)6½            |                          |                         | 1                         | Dome          |                          |              |  | 36-20 ±3                                     | Inc.                    | 2.5k                              |                           |                                  | 36 x 8 x 12                          | Opt., Wood  | Black Knit                | 71           | 3900.00 Pair   |
|                              | M20II                       | Powered, Biamp, Vented      | (2)4½            |                          |                         | 1                         | Dome          |                          |              |  | 40-20 ±3                                     | Inc.                    | 2.5k                              |                           |                                  | 20 x 7 x 14                          | Opt., Wood  | Black Knit                | 42           | 2990.00 Pair   |
|                              | M30II                       | Powered, Biamp, Vented      | 6½               |                          |                         | 1                         | Dome          |                          |              |  | 40-20 ±3                                     | Inc.                    | 2.5k                              |                           |                                  | 15 x 7 x 12                          | Opt., Wood  | Black Knit                | 35           | 1990.00 Pair   |
| MIRAGE                       | 260                         | Ported                      | 6½               |                          |                         | ¾                         | Dome          |                          |              |  | 60-20 ±3                                     | 88                      | 15                                | 2.2k                      | 6/4                              | 15 x 9 x 9                           | Opt.        | Black Knit                | 15           | 260.00 Pair    |
|                              | 360                         | Ported                      | 8                |                          |                         | ¾                         | Dome          |                          |              |  | 50-20 ±3                                     | 88                      | 15                                | 2.2k                      | 6/4                              | 20 x 10 x 9                          | Opt.        | Black Knit                | 20           | 400.00 Pair    |
|                              | 460                         | Ported                      | 8                |                          |                         | 1                         | Dome          |                          |              |  | 40-20 ±3                                     | 88                      | 15                                | 2.2k                      | 6/4                              | 25 x 10 x 11                         | Opt.        | Black Knit                | 31           | 600.00 Pair    |
| (Continued)                  |                             |                             |                  |                          |                         |                           |               |                          |              |  |  |                         |                                   |                           |                                  |                                      |             |                           |              |                |



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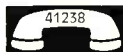
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# GLENMONITOR USA





# LOUDSPEAKERS

| MANUFACTURER                  | Model       | Design Principle   | Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Control? Woofer W. Midrange M. Woofer = 1, Superwoofer = ST | Average Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish                 | Grille Color and Material | Weight, Lbs. | Price, \$           |
|-------------------------------|-------------|--|--------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|--|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|------------------------|---------------------------|--------------|---------------------|
| MIRAGE<br>(Continued)         | 760         | Ported   | (2)8                     |                         |                           | 1             | Dome                     |              |  | 30-20<br>$\pm$ 3                                | 89                      | 30                                | 2.2k                      | 8/4                              | 37 x 11 x 14                         | Opt.                   | Black Knit                | 62           | 1000.00<br>Pair     |
|                               | M1          | Ported, Bipolar  | (2)8                     | (2)4                    | Cones                     | (2)3/4        | Domes                    |              |  | 20-22<br>$\pm$ 2                                | 86                      | 60                                | 300, 2.2k                 | 6/4                              | 59 x 19 x 9                          | Black Lacq.            | Black Knit                | 120          | 5000.00<br>Pair     |
| MISSION                       | 761         | Inf. Baf.  | 6 1/2                    |                         |                           | 3/4           | Dome                     |              |  | 58-20<br>$\pm$ 3                                | 89                      | 20                                | 4.2k                      | 6/5                              | 8 x 15 x 9                           | Black Ash Vinyl Opt.   | Black Knit                | 13.2         | 249.00<br>Pair      |
|                               | 762         | Bass Ref.  | 8                        |                         |                           | 3/4           | Dome                     |              |  | 50-20<br>$\pm$ 3                                | 93                      | 20                                | 4.3k                      | 8/4                              | 10 x 20 x 11                         | Opt., Vinyl            | Black Knit                | 20.9         | 399.00<br>Pair      |
|                               | 763         | Bass Ref.  | 8                        |                         |                           | 3/4           | Dome                     |              |  | 42-20<br>$\pm$ 3                                | 89                      | 20                                | 3.2k                      | 8/4                              | 10 x 30 x 13                         | Opt., Vinyl            | Black Knit                | 35.2         | 599.00<br>Pair      |
|                               | 764         | Bass Ref.  | 8 1/4                    |                         |                           | 1             | Dome                     |              |  | 38-20<br>$\pm$ 3                                | 88                      | 20                                | 3k                        | 8/4                              | 10 x 34 x 13                         | Opt., Vinyl            | Black Knit                | 44           | 999.00<br>Pair      |
|                               | 765         | Bass Ref.  | (2)8                     |                         |                           | 1             | Dome                     |              |  | 40-20<br>$\pm$ 3                                | 95                      | 50                                | 3.2k                      | /2                               | 10 x 37 x 14                         | Opt., Wood             | Black Knit                | 50.6         | 1299.00<br>Pair     |
|                               | 767         | Powered Inf. Baf.  | (2)8 1/4, (2)6 1/2       |                         |                           | 1             | Dome                     | W            |  | 20-20<br>$\pm$ 3                                | 91                      | 20                                | 2k                        | 8/6                              | 11 x 55 x 17                         | Opt., Wood Lacq.       | Black Knit Black Metal    | 220          | 3990.00<br>Pair     |
| MITSUBISHI                    | M-S5100     | Bass Ref.  | 12                       | 5                       | Cone                      | 1             | Dome                     | M, T         |  | 45-20<br>$\pm$ 3                                | 92                      | 20                                | 800, 3.25k                | 8/                               | 41 x 15 x 13                         | Opt.                   | Black Knit                |              | 1600.00<br>Pair     |
|                               | M-S52G      | Inf. Baf.  | 4                        |                         |                           | 2             | Cone                     |              |  |   |                         |                                   |                           |                                  | 8 x 5 x 5                            | Opt.                   | Black Metal               |              | 150.00<br>Pair      |
| M & K                         | S-100       | Ac. Sus. Sat.  | (2)5                     |                         |                           | (3)1          | Domes                    | M, T         |  | 65-22<br>$\pm$ 3                                | 93                      | 7.5                               | 2k                        | 4/4                              | 11 x 12 x 9                          | Opt., Lacq.            | Black Knit                | 20           | From 795.00<br>Pair |
|                               | MX-2000     | Powered Ac. Sus. Subwoof. Center Ch. & Powered Ac. Sus. Subwoof. | (2)12                    |                         |                           |               |                          | W            |  | 20-125<br>$\pm$ 3                               |                         | 200                               | 50-125 (Adj.)             | 600/15k                          | 23 x 19 x 26                         | Black Oak              | Black Knit                | 105          | 1695.00             |
|                               | MX-1000CC   | Powered Ac. Sus. Subwoof.  | (2)12                    | (2)5                    | Cones                     | (3)1          | Domes                    | W, M, T      |  | 20-22<br>$\pm$ 3                                | 93                      | 200 Inc., 7.5 Ext.                | 50-125 (Adj.), 2k         | 600/15k, 4/4                     | 26 x 28 x 24                         | Gray Lacq.             | Black Knit                | 135          | 1995.00             |
|                               | MX-1000     | Powered Ac. Sus. Subwoof.  | (2)12                    |                         |                           |               |                          | W            |  | 20-125<br>$\pm$ 3                               |                         | Inc.                              | 50-125 (Adj.)             | 15k                              | 26 x 28 x 22                         | Gray Lacq.             | Black Knit                | 115          | 1495.00             |
|                               | S1B         | Ac. Sus. Sat.  | (2)5                     |                         |                           | (2)1          | Domes                    | M, T         |  | 65-22<br>$\pm$ 3                                | 93                      | 7.5                               | 2k                        | 4/4                              | 21 x 8 x 8                           | Opt., Wood             | Black Knit                | 18           | 725.00<br>Pair      |
|                               | S2B         | Ac. Sus. Sat.  | 6 1/2                    |                         |                           | 1             | Dome                     | M, T         |  | 65-22<br>$\pm$ 3                                | 90                      | 10                                | 2k                        | 4/4                              | 13 x 9 x 8                           | Opt., Wood             | Black Knit                | 15           | 550.00<br>Pair      |
|                               | S3B         | Ac. Sus. Sat.  | 5                        |                         |                           | 1             | Dome                     | M, T         |  | 85-22<br>$\pm$ 3                                | 90                      | 10                                | 2k                        | 4/4                              | 11 x 7 x 7                           | Opt., Wood             | Black Knit                | 9            | 395.00<br>Pair      |
|                               | SX4         | Ac. Sus. Sat.  | (2)5                     |                         |                           | (2)1          | Domes                    | M, T         |  | 65-22<br>$\pm$ 3                                | 93                      | 7.5                               | 2k                        | 4/4                              | 20 x 8 x 7                           | Black                  | Black Knit                | 14           | 495.00<br>Pair      |
|                               | SX7         | Ac. Sus. Sat.  | 4                        |                         |                           | 3/4           | Dome                     |              |  | 100-20<br>$\pm$ 3                               | 87                      | 5                                 | 2k                        | 4/4                              | 8 x 5 x 5                            | Black Metal Opt., Wood | Perf. Metal Black Knit    | 6            | 240.00<br>Pair      |
|                               | V1B         | Powered Ac. Sus. Subwoof.  | 12                       |                         |                           |               |                          | W            |  | 20-125<br>$\pm$ 3                               |                         | Inc.                              | 50-125 (Adj.)             | 600/15k                          | 18 x 19 x 17                         | Opt., Wood             | Black Knit                | 50           | 850.00              |
|                               | V2B         | Powered Ac. Sus. Subwoof.  | 12                       |                         |                           |               |                          | W            |  | 24-125<br>$\pm$ 3                               |                         | Inc.                              | 50-125 (Adj.)             | 600/15k                          | 18 x 19 x 17                         | Opt., Wood             | Black Knit                | 43           | 695.00              |
|                               | V3B         | Powered Ac. Sus. Subwoof.  | 12                       |                         |                           |               |                          | W            |  | 24-125<br>$\pm$ 3                               |                         | Inc.                              | 50-125 (Adj.)             | 600/15k                          | 18 x 18 x 15                         | Black                  | Black Knit                | 38           | 595.00              |
|                               | VX4         | Powered Ac. Sus. Subwoof.  | 12                       |                         |                           |               |                          | W            |  | 30-125<br>$\pm$ 3                               |                         | Inc.                              | 50-125 (Adj.)             | 600/15k                          | 19 x 18 x 14                         | Black                  | Black Knit                | 38           | 440.00              |
|                               | VX7         | Powered Ac. Sus. Subwoof.  | 8                        |                         |                           |               |                          | W            |  | 40-180<br>$\pm$ 3                               |                         | Inc.                              | 90-180 (Adj.)             | 600/15k                          | 12 x 10 x 10                         | Black                  | Black Knit                | 21           | 360.00              |
| MONITOR AUDIO                 | R100        | Inf. Baf.  | 8                        |                         |                           | 1             | Dome                     |              |  | 60-20<br>$\pm$ 3                                | 89                      | 15                                | 2.8k                      | 8/                               | 16 x 10 x 7                          | Opt., Vinyl            | Black Knit                | 26 1/2       | 349.00<br>Pair      |
|                               | Monitor 7   | Bass Ref.  | 4                        |                         |                           | 3/4           | Dome                     |              |  | 60-20<br>$\pm$ 3                                | 88                      | 15                                | 2.9k                      | 8/                               | 14 x 7 x 7                           | Black Knit             | Black Knit                | 16 1/2       | 429.00<br>Pair      |
|                               | Monitor 9   | Inf. Baf.  | 6                        |                         |                           | 1             | Dome                     |              |  | 55-20<br>$\pm$ 3                                | 88                      | 15                                | 3k                        | 8/                               | 14 x 9 x 8                           | Black Med-ite          | Black Knit                | 35           | 579.00<br>Pair      |
|                               | R300MD      | Inf. Baf.  | 8                        |                         |                           | 3/4           | Dome                     |              |  | 50-20<br>$\pm$ 3                                | 90                      | 15                                | 3.4k                      | 8/                               | 19 x 10 x 13                         | Opt., Wood             | Black Knit                | 44           | 699.00<br>Pair      |
|                               | R352MD      | Bass Ref.  | 8                        |                         |                           | 3/4           | Dome                     |              |  | 45-20<br>$\pm$ 3                                | 91                      | 15                                | 3.9k                      | 8/                               | 25 x 10 x 13                         | Opt., Wood             | Black Knit                | 64           | 899.00<br>Pair      |
|                               | R452MD      | Bass Ref.  | 8                        |                         |                           | 1             | Dome                     |              |  | 40-20<br>$\pm$ 3                                | 91                      | 15                                | 4k                        | 8/                               | 25 x 10 x 13                         | Opt., Wood             | Black Knit                | 66           | 1199.00<br>Pair     |
|                               | MA852 Gold  | Inf. Baf.  | 8                        |                         |                           | 1             | Dome                     |              |  | 50-30<br>$\pm$ 3                                | 89                      | 15                                | 4.6k                      | 8/                               | 18 x 10 x 11                         | Opt., Wood             | Black Knit                | 46           | 1350.00<br>Pair     |
|                               | MA952 Gold  | Inf. Baf.  | (2)6                     |                         |                           | 1             | Dome                     |              |  | 45-30<br>$\pm$ 3                                | 89                      | 15                                | 4.8k                      | 8/                               | 31 x 9 x 13                          | Opt., Wood             | Black Knit                | 80           | 1750.00<br>Pair     |
|                               | MA1200 Gold | Bass Ref.  | 6                        |                         |                           | 1             | Dome                     |              |  | 35-30<br>$\pm$ 3                                | 89                      | 15                                | 4k                        | 8/                               | 36 x 8 x 10                          | Opt., Wood             | Black Knit                | 75           | 2250.00<br>Pair     |
|                               | MA1800 Gold | Bass Ref.  | (2)6                     |                         |                           | 1             | Dome                     |              |  | 30-30<br>$\pm$ 3                                | 89                      | 20                                | 4.8k                      | 8/                               | 46 x 12 x 15                         | Opt., Wood             | Black Knit                | 132          | 3600.00<br>Pair     |
| MONOLITH ACOUSTICS            | I           | Inf. Baf.  | (2)7                     |                         |                           | 1             | Dome                     |              |  | 45-22<br>$\pm$ 3                                | 89                      | 50                                | 3k                        | 8/3                              | 16 x 13 x 42                         | Teak                   | Black Knit                | 94           | 732.00              |
|                               | II          | Inf. Baf.  | (2)7                     | 2                       | Dome                      | 1             | Dome                     |              |  | 45-22<br>$\pm$ 3                                | 89                      | 50                                | 800, 5k                   | 8/3                              | 16 x 13 x 44                         | Teak                   | Black Knit                | 112          | 984.00              |
| MORDAUNT-SHORT<br>(Continued) | MS 3.10     | Bass Ref.  | 5                        |                         |                           | 3/4           | Dome                     |              |  | 75-20   | 88                      | 15                                | 5k                        | 8/                               | 11 x 7 x 8                           | Black Ash              | Black Knit                | 8            | 229.00<br>Pair      |

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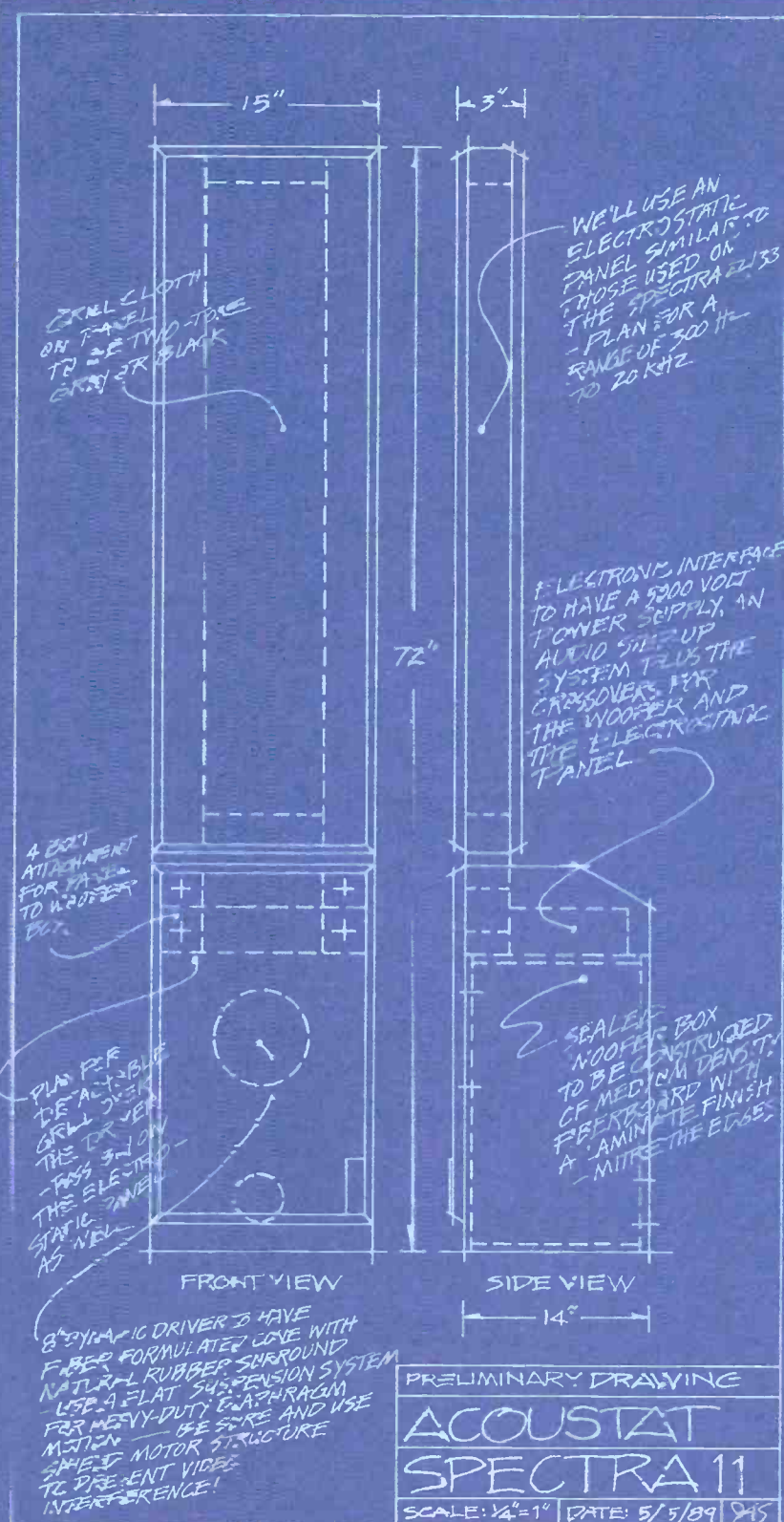
| MANUFACTURER          | Model           | Design Principle               | Enclosure or System Type | Woofer Diameter, inches | Midrange Diameter, inches | Midrange Type | Tweeter Diameter, inches | Tweeter Type | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Subwoofer = ST | Angular Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, inches (To Nearest inch) | Finish                | G grille Color and Material | Weight, Lbs. | Price, \$        |
|-----------------------|-----------------|--------------------------------|--------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|--|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-----------------------|-----------------------------|--------------|------------------|
| ROHRER<br>(Continued) | RM2902R         | Ported                         | (2)9                     |                         |                           | 3             | Ribbon                   | T            |  | 40-40   | 91                      | 30                                | 4k                        | 8/10                             | 51 x 20 x 12                         | Black                 | Black Knit                  | 78           | 2700.00 Pair     |
|                       | RB602D          | Ported                         | 6                        |                         |                           | 1/2           | Dome                     | T            |  | 25-40   | 88                      | 50                                | 4k                        | 8/6                              | 41 x 9 x 9                           | Black                 | Black Knit                  | 45           | 1495.00 Pair     |
|                       | RB2602D         | Trans. Line Ported Subwoof.    | (2)6                     |                         |                           | 1/2           | Dome                     | T            |  | 20-40   | 94                      | 30                                | 4k                        | 4/3.2                            | 48 x 9 x 24                          | Black                 | Black Knit                  | 95           | 2995.00 Pair     |
|                       | RES28           | Ported                         | (2)8                     |                         |                           |               |                          |              |  | 20-200  | 91                      | 50                                |                           | 8/8                              | 26 x 15 x 24                         | Black                 | Black Knit                  | 75           | 2400.00 Pair     |
|                       | RE602D          | Ported                         | 6                        |                         |                           | 1/2           | Dome                     | T            |  | 35-40   | 89                      | 30                                | 4k                        | 8/6                              | 14 x 9 x 14                          | Black                 | Foam                        | 30           | 1600.00 Pair     |
|                       | RE2602D         | Ported                         | (2)6                     |                         |                           | 1/2           | Dome                     | T            |  | 35-40   | 94                      | 30                                | 4k                        | 4/3.2                            | 21 x 9 x 21                          | Black                 | Foam                        | 50           | 2400.00 Pair     |
|                       | RT1201          | Ported Subwoof.                | 12                       |                         |                           |               |                          |              |  | 16-100 $\pm$ 3                                  | 91                      | 50                                |                           | 8/6                              | 19 Dia. x 80                         | Black                 | Black Knit                  | 70           | 1600.00 Pair     |
|                       | RT212           | Ported Subwoof.                | (2)12                    |                         |                           |               |                          |              |  | 16-100 $\pm$ 1                                  | 97                      | 30                                |                           | 4/3                              | 19 Dia. x 80                         | Black                 | Black Knit                  | 90           | 2400.00 Pair     |
|                       | RT212.5         | Ported Subwoof.                | (2)12                    |                         |                           |               |                          |              |  | 16-100 $\pm$ 3                                  | 97                      | 30                                |                           | 4/3                              | 19 Dia. x 44                         | Black                 | Black Knit                  | 80           | 2400.00 Pair     |
|                       | RT212E          | Ported Subwoof.                | (2)12                    |                         |                           |               |                          |              |  | 12-100 $\pm$ 3                                  | 95                      | 50                                |                           | 4/3                              | 19 Dia. x 80                         | Black                 | Black Knit                  | 95           | 4200.00 Pair     |
|                       | RT212.5E        | Ported Subwoof.                | (2)12                    |                         |                           |               |                          |              |  | 16-100 $\pm$ 1.5                                | 95                      | 50                                |                           | 4/3                              | 19 Dia. x 44                         | Black                 | Black Knit                  | 75           | 4200.00 Pair     |
| ROKSAN                | Darius          | Inf. Baf.                      | 8                        |                         |                           | 1             | Dome                     |              |  | 53-20   | 87                      | 50                                | 1.6k                      | 8/4                              | 19 x 11 x 16                         |                       | Black                       |              |                  |
|                       |                 |                                |                          |                         |                           |               |                          |              |  |   |                         |                                   |                           |                                  |                                      |                       |                             |              |                  |
| ROSSMAN AUDIO         | SA.5            | Powered Bass Ref.              | 5                        |                         |                           | 1             | Dome                     | No           |  | 55-20 $\pm$ 3                                   | 88                      | 15 Inc.                           | 2.3k                      | 100k                             | 13 x 9 x 12                          | Black Slate           | Black Knit                  | 48 Pair      | 400.00 Pair      |
|                       | SA.8            | Powered Bass Ref.              | 6 1/2                    |                         |                           | 1             | Dome                     | No           |  | 42-20 $\pm$ 3                                   | 89                      | 15 Inc.                           | 2.3k                      | 100k                             | 17 x 10 x 12                         | Black Slate           | Black Knit                  | 60 Pair      | 500.00 Pair      |
| ROYD LOUDSPEAKER      | A7II            | Reflex                         | 5                        |                         |                           | 3/4           | Dome/Cone                |              |  | 70-22 $\pm$ 3                                   | 89                      | 10                                | 4k                        | 8/6.7                            | 12 x 8 x 7                           | Black Vinyl Opt.      | Black Foam                  | 19 Pair      | 350.00 Pair      |
|                       | Coniston R      | Reflex                         | 5                        |                         |                           | 3/4           | Dome                     |              |  | 60-22 $\pm$ 3                                   | 89                      | 10                                | 4k                        | 8/6.7                            | 12 x 8 x 7                           | Black Vinyl Opt.      | Black Foam                  | 20 Pair      | From 400.00 Pair |
|                       | A14II           | Reflex                         | 6 1/2                    |                         |                           | 3/4           | Dome                     |              |  | 55-22 $\pm$ 3                                   | 89                      | 10                                | 4k                        | 8/6.7                            | 16 x 10 x 9                          | Black Vinyl Wal. Ven. | Black Knit                  | 30 Pair      | 550.00 Pair      |
|                       | Eden            | Reflex                         | 5                        |                         |                           | 3/4           | Dome                     |              |  | 57-22 $\pm$ 3                                   | 90                      | 10                                | 4k                        | 8/6.7                            | 12 x 8 x 7                           | Black Vinyl Wal. Ven. | Black Knit                  | 31 Pair      | 850.00 Pair      |
| RSL                   | 1800 Mini Mon.  | Bass Ref.                      | 6 1/2                    |                         |                           | 3/4           | Cone                     |              |  | 60-20 $\pm$ 3                                   | 90                      | 15                                | 3.5k                      | 8/                               | 15 x 9 x 10                          | Black                 | Black Cloth                 | 9            | 79.00            |
|                       | 2600 Mini Mon.  | Bass Ref.                      | 8                        | 4                       | Cone                      | 1             | Dome                     |              |  | 50-20 $\pm$ 3                                   | 92                      | 15                                | 1k, 4k                    | 4/                               | 14 x 9 x 11                          | Black                 | Black Cloth                 | 13           | 149.00           |
|                       | 3800            | Bass Ref.                      | 12                       | 4                       | Cone                      | 1             | Dome                     | M, T         |  | 32-20 $\pm$ 3                                   | 92                      | 15                                | 800, 5k                   | 8/                               | 26 x 15 x 12                         | Opt.                  | Black Metal                 | 43           | 319.00           |
|                       | MX-1            | Bass Ref.                      | 15                       | 5                       | Cone                      | 1             | Horn                     |              |  | 45-20 $\pm$ 3                                   | 98                      | 10                                | 1k, 4k                    | 4/                               | 41 x 16 x 18                         | Opt.                  | Black Cloth                 | 77           | 199.00           |
|                       | Outsider        | Ac. Sus.                       | 6 1/2                    |                         |                           | 3             | Cone                     |              |  | 60-20 $\pm$ 3                                   | 90                      | 15                                | 2.5k                      | 8/                               | 12 x 8 x 7                           | Opt.                  | Black Cloth                 | 8 1/2        | 99.00            |
|                       | Depth Charge    | Subwoof.                       | 12                       |                         |                           |               |                          |              |  | 30-120 $\pm$ 3                                  | 92                      | 25                                | 120                       | 4/                               | 26 x 21 x 19                         | Opt.                  | Black Cloth                 | 66 1/2       | 259.00           |
|                       | Mag.            | Ac. Sus.                       | 8                        |                         |                           | 1             | Dome                     | T            |  | 45-22 $\pm$ 3                                   | 90                      | 20                                | 3k                        | 8/                               | 17 x 10 x 9                          | Opt.                  | Black Cloth                 | 19           | 169.00           |
|                       | Speedscn.       | Pas. Rad.                      | 8                        | 1 1/4                   | Dome                      |               | Ribbon                   | M, T         |  | 32-20 $\pm$ 3                                   | 88                      | 35                                | 6k, 12k                   | 8/                               | 48 x 19 x 5                          | Opt.                  | Black Cloth                 | 67           | 449.00           |
|                       |                 |                                |                          |                         |                           |               |                          |              |  |   |                         |                                   |                           |                                  |                                      |                       |                             |              |                  |
| SANSUI                | SW-S7.7U        | Sat. & Subwoof.                | (2)6 1/2                 | 5                       | Cone                      | (2)1/2        | Domes                    |              |  | 55-22 $\pm$ 3                                   | 88                      | 10                                | 200, 6k                   | 6/                               | Three Pieces                         | Opt.                  | Black Knit                  | 35 Sys.      | 380.00 Sys.      |
|                       | SP-X5U          | Inf. Baf.                      | 6 1/2                    | 5 1/4                   | Cone                      | 1             | Dome                     |              |  | 45-23 $\pm$ 3                                   | 88                      | 10                                | 350, 7k                   | 6/                               | 12 x 38 x 12                         | Opt.                  | Black Knit                  | 36           | 250.00           |
|                       | SP-X3U          | Inf. Baf.                      | 10                       | 5                       | Cone                      | 3/4           | Dome                     |              |  | 35-23   | 90                      | 10                                | 700, 5k                   | 8                                | 14 x 27 x 13                         | Opt.                  | Black Knit                  | 43           | 200.00           |
|                       | SP-X2U          | Inf. Baf.                      | 8                        |                         |                           | 3/4           | Dome                     |              |  | 40-23   | 90                      | 10                                | 5k                        | 8/                               | 12 x 21 x 10                         | Opt.                  | Black Knit                  | 28           | 150.00           |
|                       | SP-X1U          | Inf. Baf.                      | 6 1/2                    |                         |                           | 3/4           | Dome                     |              |  | 50-22 $\pm$ 3                                   | 90                      | 10                                | 6k                        | 8/                               | 10 x 15 x 9                          | Opt.                  | Black Knit                  | 17           | 220.00 Pair      |
|                       | Vintage SP-100i | Inf. Baf.                      | 8                        |                         |                           | 1             | Dome                     |              |  | 40-30   | 88                      | 10                                | 1.5k                      | 6/                               | 11 x 18 x 13                         | Black                 | Black Knit                  | 44 1/2       | 900.00           |
| SASS                  | SA-1            | Tuned Port                     | 8                        |                         |                           | 3/4           | Dome                     |              |  | 40-18 $\pm$ 3                                   | 90                      | 25                                | 2k                        | 8/6                              | 38 x 10 x 10                         | Opt., Oiled Wood      | Black Knit                  | 36           | 995.00 Pair      |
|                       | SA-2            | Tuned Port                     | 8                        |                         |                           | 3/4           | Dome                     |              |  | 40-18 $\pm$ 3                                   | 90                      | 25                                | 2k                        | 8/6                              | 23 x 12 x 13                         | Opt., Oiled Wood      | Black Knit                  | 30           | 749.00 Pair      |
|                       | BH-30           | Tuned Port                     | 6                        |                         |                           | 1/2           | Dome                     |              |  | 55-18 $\pm$ 4                                   | 85                      | 15                                | 3.5k                      | 8/6                              | 15 x 10 x 10                         | Opt., Vinyl White     | Opt., Knit White            | 32           | 369.00 Pair      |
|                       | WS 105          | In-Wall                        | 5                        |                         |                           | 1 1/4         | Cone                     |              |  | 70-17 $\pm$ 3                                   | 88                      | 10                                | 1.9k                      | 8/6                              | 11 x 8                               | White                 | Perf. White                 | 7            | 99.95            |
|                       | WS 205          | In-Wall                        | 6                        |                         |                           | 1/2           | Dome                     |              |  | 60-19 $\pm$ 3                                   | 90                      | 10                                | 3.5k                      | 8/6                              | 13 x 10                              | White                 | Perf. White                 | 7            | 212.50           |
|                       | CS-II           | Vented, Ceiling Mount          | 6                        |                         |                           | 1/2           | Dome                     |              |  | 55-19 $\pm$ 4                                   | 90                      | 25                                | 3.5k                      | 8/6                              | 19 x 13 x 8                          | White                 | Opt., White                 | 24           | 225.00           |
|                       | CS-SUB          | Vented, Ceiling Mount Subwoof. | 8                        |                         |                           |               |                          |              |  | 40-200 $\pm$ 3                                  | 90                      | 35                                |                           | 8/7                              | 19 x 13 x 8                          | White                 | Opt., White                 | 30           | 250.00           |
| (Continued)           |                 |                                |                          |                         |                           |               |                          |              |  |   |                         |                                   |                           |                                  |                                      |                       |                             |              |                  |

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# LOUDSPEAKERS

| MANUFACTURER         | Model                     | Design Principle, Enclosure or System Type               | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Control? Woofer = W, Midrange = M, Tweeter = T | Acoustic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms, Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish           | Grille Color and Material | Weight, Lbs. | Price, \$            |
|----------------------|---------------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|---|--|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|------------------|---------------------------|--------------|----------------------|
| SASS<br>(Continued)  | ITC 1                     | Vented, Seventh Order                                    | 4                       | 1½                        | Dome          | ¾                        | Dome         | M, T  | 50-16 $\pm$ 3                                    | 88                      | 50                                | 2k, 6k                    | 8/6                             | 7 x 7 x 11                           | Opt., Oiled Wood | Opt., Knit                | 39 Pair      | 1200.00 Pair w/EQ    |
|                      | ITC 4                     | Vented, Seventh Order Subwoof.                           | 10                      |                           |               |                          |              |   | 24-120 $\pm$ 3                                   |                         |                                   |                           |                                 | 18 x 18 x 19                         | Opt., Oiled Wood | Opt., Knit                | 61           | 1400.00 Pair w/Xover |
| SAVARD               | Series 303                | Bass Ref.  | 10                      |                           |               | 4                        | Horn         |   | 28-30 $\pm$ 5                                    | 96                      | 5                                 | 4k                        | 4/4                             | 13 x 20 x 9                          | Oak              | Black Knit                | 27           | 349.00 Pair          |
|                      | Performance Phase XV      | Bass Ref.  | 10                      | 2x6                       | Horn          | (2)4                     | Horns        |   | 28-30 $\pm$ 5                                    | 97                      | 5                                 | 2k, 4k                    | 4/4                             | 27 x 15 x 12                         | Oak              | Black Knit                | 49           | 499.00 Pair          |
|                      | Studio Monitor Phase XXV  | Bass Ref.  | 12                      | 4x10                      | Horn          | (2)4                     | Horns        | T   | 25-30 $\pm$ 5                                    | 103                     | 5                                 | 1.5k, 4k                  | 4/4                             | 32 x 17 x 15                         | Oak              | Black Knit                | 60           | 669.00 Pair          |
|                      | B M F Phase VII           | Bass Ref.  | 15                      | 4x10                      | Horn          | (2)4                     | Horns        | T   | 23-30 $\pm$ 5                                    | 104                     | 5                                 | 1.5k, 4k                  | 4/4                             | 31 x 21 x 18                         | Oak              | Black Knit                | 75           | 995.00 Pair          |
|                      | Precision Phase XXI       | Biamp, Bass Ref.   | 15                      | 10, 4x10                  | Cone, Horn    | (2) 2x6, (2)4            | Horns        | M, T  | 23-30 $\pm$ 5                                    | 105                     | 5                                 | 150, 2k, 4k, 8k           | 4/4                             | 53 x 22 x 18                         | Oak              | Black Knit                | 170          | 1395.00 Pair         |
| S.C.D.               | G.C. Rock Monitor II      | Sealed   | (2)8                    | 3                         | Dome          | (2)2                     | Ribbons      | No  | 50-20 $\pm$ 3                                    | 91                      | 50                                | 800, 4k                   | 12/5                            | 11 x 10 x 36                         | Wood Vinyl Black | Black Knit                | 105 Pair     | 899.00 Pair          |
|                      | J.C. Classical Monitor II | Sealed   | 12                      | 3                         | Dome          | (2)2                     | Ribbons      | No  | 38-24 $\pm$ 3                                    | 91                      | 100                               | 500, 4k                   | 8/3                             | Four Pieces                          | Black Knit       | None                      | 235 Sys.     | 1895.00 Sys.         |
| SCOTT                | SP 28                     |  | 8                       |                           |               | 3                        | Cone         |   | 60-20 $\pm$ 3                                    | 90                      | 5                                 | 4k                        | 8/8                             | 11 x 8 x 19                          | Black Wood Vinyl | Black Knit                | 25 Pair      | 59.95                |
|                      | SP 38D                    |  | 8                       |                           |               | (2)2                     | Cones        |   | 55-20 $\pm$ 3                                    | 90                      | 5                                 | 1k, 4k                    | 8/8                             | 21 x 10 x 9                          | Black Wood Vinyl | Black Knit                | 28 Pair      | 69.95                |
|                      | 6.2A                      |  | 6                       |                           |               | 2                        | Cone         |   | 60-18 $\pm$ 3                                    | 90                      | 5                                 | 3k                        | 8/8                             | 15 x 9 x 7                           | Black Wood Vinyl | Black Knit                | 9            | 79.95                |
|                      | 8.2A                      |  | 8                       |                           |               | 2                        | Cone         |   | 55-18 $\pm$ 3                                    | 92                      | 5                                 | 3k                        | 8/8                             | 18 x 10 x 7                          | Black Wood Vinyl | Black Knit                | 12           | 89.95                |
|                      | 10.3A                     |  | 10                      | 4½                        | Cone          | 2                        | Cone         |   | 45-19 $\pm$ 3                                    | 92                      | 10                                | 1k, 4k                    | 8/8                             | 23 x 12 x 9                          | Black Wood Vinyl | Black Knit                | 20           | 129.95               |
|                      | S123                      |  | 12                      | 4½                        | Cone          | 2                        | Cone         |   | 45-20 $\pm$ 3                                    | 92                      | 10                                | 1k, 4k                    | 8/8                             | 31 x 16 x 11                         | Black Wood Vinyl | Black Knit                | 33½          | 164.95               |
|                      | AS 1B                     |  | 6½                      |                           |               | 1                        | Dome         |   | 55-22 $\pm$ 3                                    | 90                      | 15                                | 2.2k                      | 4/4                             | 15 x 9 x 8                           | Black Wood Vinyl | Black Knit                | 14           | 149.95               |
|                      | S10T5                     |  | 10                      | (2)4½                     | Cones         | (2)1¾                    | Cones        |   | 45-20 $\pm$ 3                                    | 92                      | 10                                | 4k, 3.5k                  | 8/8                             | 31 x 13 x 9                          | Black Wood Vinyl | Black Knit                | 25½          | 199.95               |
| SEATTLE SOUND        | P.S. 1                    | Triamped, Vented, 2, 4, & 6 Orders Tuned Port, 4th Order | (2)8                    | 6½                        | Cone          | ¾                        | Dome         | W   | 20-21 $\pm$ 3                                    | Inc.                    | 150, 2.5k                         |                           |                                 | 39 x 14 x 17                         | Opt., Wood       | Black Knit                | 110          | 3500.00 Pair         |
|                      | C.I. 2                    | Tuned Port, 4th Order                                    | 5¼                      |                           |               | ¾                        | Dome         |   | 50-21 $\pm$ 3                                    | 89                      | 5                                 | 2.5k                      | 8/4                             | 15 x 14 x 4                          | Black            | Perf. Metal               | 13           | 499.00 Pair          |
|                      | C.I. 3                    | Tuned Port, 4th Order                                    | 6½                      |                           |               | ¾                        | Dome         |   | 42-21 $\pm$ 3                                    | 91                      | 10                                | 2.5k                      | 8/4                             | 22 x 10 x 7                          | Black            | Perf. Metal               | 23           | 599.00 Pair          |
|                      | C.I. 4                    | Tuned Port, 4th Order                                    | 8                       |                           |               | ¾                        | Dome         |   | 36-21 $\pm$ 3                                    | 92                      | 20                                | 2.5k                      | 8/4                             | 22 x 14 x 9                          | Black            | Perf. Metal               | 39           | 899.00 Pair          |
|                      | M2                        | Tuned Port, 4th Order                                    | 5¼                      |                           |               | ¾                        | Dome         |   | 50-21 $\pm$ 3                                    | 89                      | 5                                 | 2.5k                      | 8/4                             | 13 x 7 x 9                           | Opt.             | Black Knit                | 13           | 499.00 Pair          |
|                      | M3                        | Tuned Port, 4th Order                                    | 6½                      |                           |               | ¾                        | Dome         |   | 42-21 $\pm$ 3                                    | 91                      | 10                                | 2.5k                      | 8/4                             | 21 x 8 x 10                          | Opt.             | Black Knit                | 23           | 599.00 Pair          |
|                      | M4                        | Tuned Port, 4th Order                                    | 8                       |                           |               | ¾                        | Dome         |   | 36-21 $\pm$ 3                                    | 92                      | 20                                | 2.5k                      | 8/4                             | 28 x 10 x 12                         | Opt.             | Black Knit                | 39           | 899.00 Pair          |
|                      | M5                        | Tuned Port, 4th Order                                    | 8                       | 6½                        | Cone          | 1                        | Dome         |   | 34-21 $\pm$ 3                                    | 93                      | 20                                | 180, 2.5k                 | 8/4                             | 31 x 11 x 13                         | Opt.             | Black Knit                | 47           | 1199.00 Pair         |
|                      | SW1                       | Tuned Port, 4th Order Subwoof.                           | (2)8                    |                           |               |                          |              |   | 20-150 $\pm$ 3                                   | 92                      | 20                                | 120                       | 8/4                             | 19 x 19 x 20                         | Opt.             |                           | 49           | 899.00               |
| SHAHINIAN ACOUSTICS  | Obelisk                   | Trans. Line, Pas. Rad.                                   | 8                       | (2)1¾                     | Domes         | (4)¾                     | Domes        |   | 28-22 $\pm$ 0.3                                  | 90                      | 50                                | 900, 1.8k                 | 5/4                             | 15 x 13 x 29                         | Opt., Wood       | Opt., Knit                | 56           | 2050.00 Pair         |
|                      | Arc                       | Pas. Rad.  | 8                       | 1¾                        | Dome          | 1                        | Dome         |   | 28-18 $\pm$ 3                                    | 88                      | 30                                | 1.9k, 10k                 | 4/3                             | 14 x 10 x 28                         | Opt., Wood       | Opt., Knit                | 44           | 1200.00 Pair         |
|                      | Lyre                      | Pas. Rad.  | 8                       |                           |               | 1                        | Dome         |   | 32-18 $\pm$ 3                                    | 90                      | 30                                | 3.5k                      | 6/5                             | 12 x 12 x 24                         | Oiled Oak        | Opt., Knit                | 43           | 950.00 Pair          |
|                      | Elf                       | Vented   | 5¼                      |                           |               | 1                        | Dome         | T   | 55-18 $\pm$ 3                                    | 90                      | 25                                | 4.5k                      | 6/5                             | 7 x 8 x 13                           | Oiled Oak        | Opt., Knit                | 28 Pair      | 450.00 Pair          |
|                      | Double Eagle              | Pas. Rad. Subwoof. Sat.                                  | (2)8                    |                           |               |                          |              |   | 20-200 $\pm$ 3                                   | 90                      | 150                               | 140                       | 6/3                             | 23 x 15 x 32                         | Opt., Wood Birch | Opt., Knit                | 105          | 1150.00 Pair         |
|                      | Diapason Module           |  | (4)5¾                   | (2)1¾                     | Domes         | (2)¾                     | Domes        | ST  | 140-25 $\pm$ 2                                   | 91                      | 150                               | 140, 4k, 7k, 11k          | 4/3                             | 15 x 22 x 7                          | Opt., Knit       |                           | 35           | 4500.00 Pair         |
| SHANNON-BROOKE AUDIO | David                     | Ac. Sus.   | 6½                      |                           |               | 1                        | Dome         |   | 75-20 $\pm$ 3                                    | 89                      | 20                                | 3.5k                      | 8/4                             | 12 x 8 x 14                          | Black Cloth      | Black Cloth               | 17           | 450.00 Pair          |
|                      | Cynthia                   | Ac. Sus.   | 10                      |                           |               | 1                        | Dome         |   | 45-21 $\pm$ 3                                    | 87                      | 20                                | 1.4k                      | 8/3                             | 12 x 12 x 37                         | Black Cloth      | Black Cloth               | 35           | 895.00 Pair          |
|                      | I                         | Ac. Sus.   | 12                      | 6½                        | Cone          | ¾                        | Dome         |   | 27-35 $\pm$ 3                                    | 89                      | 40                                | 200, 3.2k                 | 4/3                             | 20 x 19 x 39                         | Black Wal.       | Black Knit                | 80           | 1950.00 Pair         |

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## The THIEL CS5



loudspeaker system is uncompromisingly engineered to provide the most realistic music reproduction possible. It provides extreme accuracy of tonality, spatial imaging, clarity of musical detail and dynamic range. It is designed for people who want to experience all the subtle musical nuances, every delicate shading of musical timbre, and a natural, three-dimensional spaciousness... a feeling of complete musical realism.

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Contributing to superior performance is the use of such unusual materials as cast marble for the baffle, Kevlar® driver diaphragms and polystyrene capacitors.

We believe the CS5s provide a most realistic and complete musical experience. We invite you to audition them with the music you love most.

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# LOUDSPEAKERS

| MANUFACTURER     | Model       |                                     | Design Principle, Enclosure or System Type | Woofer Diameter, Inches |            | Midrange Diameter, Inches |       | Tweeter Diameter, Inches |                  | Separate Level Controls? Woofer - W, Midrange - M, Tweeter - T |         | Anechoic Frequency Response, Hz to kHz, $\pm$ dB |      | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish | Grille Color and Material | Weight, Lbs. | Price, \$ |
|------------------|-------------|-------------------------------------|--|-------------------------|------------|---------------------------|-------|--------------------------|------------------|--|---------|--|------|-------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|--------|---------------------------|--------------|-----------|
|                  |             |                                     |  |                         |            |                           |       |                          |                  |  |         |  |      |                         |                                   |                           |                                 |                                      |        |                           |              |           |
| SHURE HTS        | HTS50CF     | Inf. Baf., Fourth Order             | (2)6½                                      |                         |            | 1                         | Dome  |                          | 50-20 $\pm$ 5    | 88   |         | 2.4k   | 5.6/ | 20 x 13 x 9             | Wal.                              | Brown                     | 37                              | 666.00                               |        |                           |              |           |
|                  | HTS50LRS    | Inf. Baf., Fourth Order             | 6½   |                         |            | 1                         | Dome  |                          | 60-20 $\pm$ 5    | 85   |         | 2.4k   | 5.6/ | 13 x 10 x 9             | Wal.                              | Brown                     | 24¼                             | 444.00                               |        |                           |              |           |
|                  | HTS50SW     | Vented, Sixth Order Subwoof.        | 12   |                         |            |                           |       |                          | 33-80            | 91   |         | Ext.   | 8/   | 18 x 23 x 14            | Wal.                              | Brown                     | 65                              | 555.00                               |        |                           |              |           |
| SIDEREAL AKUSTIC | Mikro       | Sealed                              | 4  |                         |            | 1                         | Dome  |                          | 50-20            | 85   | 20      | 4k   | 8.5  | 5 x 4 x 7               | Cloth                             | None                      | 6                               | 470.00 Pair                          |        |                           |              |           |
| SIEFERT RESEARCH | Maxim III   | Ducted Port                         | 6½   |                         |            | 1                         | Dome  |                          | 46-22 $\pm$ 3    | 87   | 25      | 3.5k   | 8/6  | 13 x 11 x 9             | Opt.                              | Black Knit                | 18                              | 499.00 Pair                          |        |                           |              |           |
|                  | Maxim III H | Ducted Port                         | 6½   |                         |            | 1                         | Dome  |                          | 48-24 $\pm$ 1.5  | 87   | 25      | 3.5k   | 8/6  | 13 x 11 x 9             | Opt.                              | Black Knit                | 18                              | 549.00 Pair                          |        |                           |              |           |
|                  | Maxim IV    | Ducted Port                         | 6½   |                         |            | 1                         | Dome  |                          | 46-24 $\pm$ 1.5  | 87   | 25      | 3.5k   | 8/6  | 15 x 11 x 9             | Opt.                              | Black Knit                | 22                              | 599.00 Pair                          |        |                           |              |           |
|                  | Magnum III  | Ducted Port                         | 8  | 4                       | Cone       | 1                         | Dome  |                          | 38-24 $\pm$ 3    | 88   | 25      | 350,3.5k   | 6/4  | 22 x 14 x 13            | Opt.                              | Black Knit                | 42                              | 899.00 Pair                          |        |                           |              |           |
| SIGMET           | SL280       | Vented                              | 8  |                         |            | 1                         | Dome  |                          | 40-25            | 87   | 20      | 3k   | 8/4  | 10 x 13 x 25            | Oiled Oak                         | Gray Knit                 | 37                              | 850.00 Pair                          |        |                           |              |           |
|                  | SL260       | Vented                              | 6  |                         |            | ¾                         | Dome  |                          | 50-25            | 86   | 20      | 4k   | 8/4  | 8 x 13 x 16             | Oiled Oak                         | Gray Knit                 | 23                              | 600.00 Pair                          |        |                           |              |           |
|                  | SL230       | Ac. Sus. Sat. & Vented Subwoof.     | (2)6                                       | 3½                      | Cone       | ¾                         | Dome  |                          | 50-20            | 88   | 20      | 200,3k   | 6/3  | Three Pieces            | Oiled Oak                         | Gray Knit                 | 35 Sys.                         | 700.00 Pair                          |        |                           |              |           |
| E.S. SINFONIC    | LS1200      | Second Order                        | (2)10                                      | 5.2                     | Cone, Dome | 1                         | Dome  | W,M, T,ST                | 28-25            | 90   | 150     | 250,850, 4k                                      | 4/   | 16 x 14 x 51            | Acryl.                            | Black                     | 75                              | 7000.00 Pair                         |        |                           |              |           |
| SNELL ACoustics  | K/II        | Inf. Baf.                           | 8  |                         |            | 1                         | Dome  | T                        | 70-20 $\pm$ 2    | 90   | 10      | 2.7k   | 6/4  | 18 x 11 x 9             | Opt., Ven.                        | Black Cloth               | 52 Pair                         | 465.00 Pair                          |        |                           |              |           |
|                  | J/III       | Bass Ref.                           | 8  |                         |            | 1                         | Dome  | T                        | 49-20 $\pm$ 2    | 91   | 15      | 2.7k   | 6/4  | 23 x 13 x 10            | Opt., Ven.                        | Black Cloth               | 35                              | 680.00 Pair                          |        |                           |              |           |
|                  | E/III       | Bass Ref.                           | 8  |                         |            | 1,¾                       | Domes | T                        | 39-20 $\pm$ 1.75 | 91   | 15      | 2.7k   | 6/4  | 35 x 13 x 11            | Opt., Ven.                        | Black Cloth               | 50                              | 990.00 Pair                          |        |                           |              |           |
|                  | C/II        | Bass Ref.                           | 10   | 5                       | Cone       | 1,¾                       | Domes | T                        | 34-22 $\pm$ 3    | 88.5   | 20      | 275,2.7k   | 8/4  | 46 x 15 x 12            | Opt., Ven.                        | Black Cloth               | 90                              | 1990.00 Pair                         |        |                           |              |           |
|                  | A/III/I     | Inf. Baf.                           | 12   | 4                       | Cone       | 1,¾                       | Domes | T                        | 33-20 $\pm$ 1.5  | 86   | 100     | 275,2.7k   | 8/4  | 51 x 24 x 14            | Opt., Wood Ven.                   | Black Cloth               | 320 Pair                        | 4680.00 Pair                         |        |                           |              |           |
|                  | Q           | Inf. Baf.                           | 6½   |                         |            | 1,¾                       | Domes | T                        | 70-20 $\pm$ 1.5  | 90   | 15      | 2.2k   | 8/8  | 16 x 11 x 7             | Opt., Ven.                        | Black Cloth               | 24                              | 780.00 Pair                          |        |                           |              |           |
| SONANCE          | M30         | In-Wall Inf. Baf.                   | 4  |                         |            | 1                         | Dome  |                          | 70-20 $\pm$ 2    | 86   | 5       | 4.5k   | 8/8  | 9 x 7 x 3               | White                             | Opt., White               | 4                               | 300.00 Pair                          |        |                           |              |           |
|                  | IA          | In-Wall Inf. Baf.                   | 6½   |                         |            | 2                         | Cone  |                          | 85-12 $\pm$ 5    | 90   | 5       | 3k   | 8/8  | 12 x 9 x 3              | White                             | Opt., White               | 8                               | 185.00 Pair                          |        |                           |              |           |
|                  | II          | In-Wall Inf. Baf.                   | 6½   |                         |            | 1                         | Dome  |                          | 50-20 $\pm$ 3    | 89   | 5       | 5k   | 8/8  | 12 x 9 x 3              | White                             | Opt., White               | 8                               | 245.00 Pair                          |        |                           |              |           |
|                  | III         | In-Wall Inf. Baf.                   | 6½   |                         |            | 1                         | Dome  | T                        | 45-20 $\pm$ 2    | 88   | 5       | 2.5k   | 8/6  | 12 x 9 x 3              | White                             | Opt., White               | 9                               | 375.00 Pair                          |        |                           |              |           |
|                  | IV          | In-Wall Inf. Baf.                   | 8¼   |                         |            | 1                         | Dome  | T                        | 35-22 $\pm$ 2    | 89   | 5       | 2.5k   | 8/8  | 16 x 12 x 3             | White                             | Opt., White               | 11                              | 650.00 Pair                          |        |                           |              |           |
|                  | PSW2        | In-Wall, Inf. Baf. Subwoof.         | 8¼   |                         |            |                           |       |                          | 30-125 $\pm$ 3   | 87   | (2) 25  | 125  | 8/4  | 16 x 12 x 3             | White                             | Opt., White               | 14                              | 450.00 Pair                          |        |                           |              |           |
|                  | ASW1        | In-Wall, Powered Inf. Baf. Subwoof. | 8¼   |                         |            |                           |       |                          | 30-100 $\pm$ 2   | 92   | Inc.    | 50/75/100 (Sel.)                                 | 8/8  | 16 x 12 x 3             | White                             | Opt., White               | 15                              | 1500.00 w/VCA1 Amp; 260.00 w/o Amp   |        |                           |              |           |
| SONOGRAPHE       | SL21        | Bass Ref.                           | 6½   |                         |            | 1                         | Dome  |                          | 52-20 $\pm$ 3    | 90   | 20      | 1.5k   | 8/4  | 10 x 14 x 14            | Oiled Oak                         | Opt., Foam                | 22                              | 695.00 Pair                          |        |                           |              |           |
|                  | SW500       | Bass Ref. Subwoof.                  | 10   |                         |            |                           |       |                          | 28-110 $\pm$ 3   | 90   | 50      |  | 8/4  | 18 x 18 x 19            | Oiled Oak                         | Opt., Cloth               | 40                              | 495.00                               |        |                           |              |           |
|                  | SW1000      | Bass Ref. Subwoof.                  | (2)10                                      |                         |            |                           |       |                          | 25-110 $\pm$ 3   | 90   | 50      |  | 8/4  | 18 x 36 x 19            | Oiled Oak                         | Opt., Cloth               | 80                              | 849.00                               |        |                           |              |           |
| SONY             | SS-TL-5     | Trans. Line                         | 8  | 6½,5                    | Cones      | 1                         | Dome  |                          | 30-27            | 89   |         | 150,900, 3k                                      | 8/   | 11 x 42 x 14            | Oak Ven.                          | Black Knit                | 65                              | 900.00 Pair                          |        |                           |              |           |
|                  | SS-TL-3     | Trans. Line                         | 6½   | 5                       | Cone       | 1                         | Dome  |                          | 35-25            | 89   |         | 600,5k   | 8/   | 9 x 40 x 12             | Sim. Oak                          | Black Knit                | 40                              | 500.00 Pair                          |        |                           |              |           |
|                  | SS-TL-1     | Trans. Line                         | 6½   |                         |            | 2                         | Dome  |                          | 40-22            | 88   |         | 3k   | 8/   | 9 x 37 x 12             | Sim. Oak                          | Black Knit                | 33                              | 250.00 Pair                          |        |                           |              |           |
|                  | SA-W30      | Powered Subwoof.                    | 12   |                         |            |                           |       | Adj.                     | 20-140 +3, -4.5  |  | 60 Inc. | Adj.   | 6/   | 19 x 20 x 16            | Black                             | Black Knit                | 41                              | 300.00 Pair                          |        |                           |              |           |
| SOTA             | Vista       | Bal. Port                           | 7  |                         |            | ¾                         | Dome  | No                       | 45-22 $\pm$ 3    | 88   | 25      |  | 8/6  | 10 x 8 x 20             | Opt.                              | Black                     | 30                              | 950.00 Pair                          |        |                           |              |           |
|                  | Panorama    | Bal. Port                           | 7  |                         |            | 1                         | Dome  | No                       | 42-22 $\pm$ 3    | 88   | 25      |  | 8/6  | 14 x 8 x 16             |                                   | Black Foam                | 35                              | 1600.00 Pair                         |        |                           |              |           |
|                  | Horizon     | Bal. Port                           | 8  | 4                       | Cone       | 1                         | Dome  | No                       | 25-22 $\pm$ 3    | 88   | 25      |  | 8/6  |                         |                                   | Black Foam                |                                 | 3600.00 Pair                         |        |                           |              |           |



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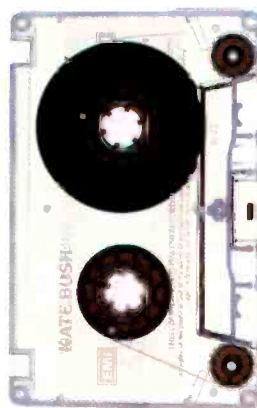
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# LOUDSPEAKERS

| MANUFACTURER | Model |  |  | Design Principle, Enclosure or System Type |  |  |  | Woofer Diameter, Inches |  |  |  | Midrange Diameter, Inches |  |  |  | Tweeter Diameter, Inches |  |  |  | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T |  |  |  | Analogous Frequency Response, Hz to kHz, ±dB |  |  |  | SPL, 1 Watt/1 Meter, dB |  |  |  | Recommended Min. Amp Power, Watts |  |  |  | Crossover Frequencies, Hz |  |  |  | Impedance, Ohms: Nominal/Minimum |  |  |  | Dimensions, Inches (To Nearest Inch) |  |  |  | Finish |  |  |  | Grille Color and Material |  |  |  | Weight, Lbs. |  |  |  | Price, \$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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# "Why all Boston Acoustics speakers sound alike. More or less."

—Andy Petite, chief designer, Boston Acoustics



At Boston Acoustics, we design each of our speakers to be musically accurate based on a live music reference standard. In other

words, instruments and voices played through our speakers have all the qualities of real live music.

Which is why all of our systems have a remarkable sonic resemblance.

To achieve that "live standard," we design accurate octave-to-octave tonal balance and wide dispersion into our speakers – from our popular A40 Series II bookshelf to our

impressive T1000 tower.

We even go a few steps further by using the highest quality materials in all of our speakers, by manufacturing each one to a rigid tolerance, and by testing every single system before it leaves the factory.

But if each of our speakers has the same tonal qualities, why offer different models? Because not all listening conditions and personal preferences are the same.

In larger rooms, at higher listening levels, the superiority of our more expensive systems is obvious. They play louder without strain, reproduce deeper bass and offer exceptional sonic imaging. Our smaller speakers match that musicality, accuracy and

tonal balance. The only difference is that they're designed to reproduce a wide musical range in smaller rooms at lower volumes.

So no matter which Boston Acoustics system you choose – one of four bookshelf models, three tower systems or our latest subwoofer/satellite model, the SubSat Six – you can be sure of one thing: what you hear will be as close to the original music as today's technology allows.

Testing this is simple. Visit your Boston Acoustics dealer and listen to any Boston speaker. The differences from one speaker to another will become readily apparent. And so will the similarities.

The A40 Series II. \$180 a pair.  
"... attains an aura of spaciousness surpassed only by some of the far more expensive multi-directional speakers."  
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The T830. \$500 a pair.  
"... we were enormously impressed ... superb sound, practical size and proportions, and affordable price."  
— Julian Hirsch, *StereoReview*

## **Boston** Acoustics

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# LOUDSPEAKERS

| MANUFACTURER           | Model                      | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls: Woofer = W, Midrange = M, Tweeter = T, Superwoofer = ST | Anechoic Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish     | Grille Color and Material | Weight, Lbs. | Price, \$            |
|------------------------|----------------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|--|--|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|------------|---------------------------|--------------|----------------------|
| SRT                    | Bolero                     | Ported                                     | 5 1/4                   |                           |               | 1                        | Dome         |  | 50-19 $\pm$ 3                                    | 90                      | 10                                | 300,3k                    | 4/3.5                            | 8 x 9 x 14                           | Opt.       | Opt.                      | 17           | 1580.00 Pair         |
|                        | Bolero Forte               | Subwoof.                                   | 6 1/2                   |                           |               |                          |              |  | 25-140 $\pm$ 3                                   | 93                      | 20                                |                           | 4/                               | 8 x 24 x 9                           | Opt.       | None                      | 22           | 920.00 Pair          |
|                        | Bolero Grande              | Ported                                     | (2)5 1/4                |                           |               | 1                        | Dome         |  | 30-20  | 88                      | 20                                | 300,3k                    |                                  | 8 x 33 x 10                          | Opt.       | Opt.                      | 38           | 3000.00 Pair         |
| STREAMLINE SYSTEMS     | M-1 Nearfield Monitors     | Vented                                     | 8                       |                           |               | 1                        | Dome         |  | 42-24  | 88                      | 20                                | 2.4k                      | 8/6                              | 16 x 10 x 7                          | Oak        | Brown                     | 32           | 2400.00 Pair         |
| SUMD                   | Aria                       | Planar Dipole Ducted Port Subwoof.         |                         |                           |               |                          |              |  | 40-20 $\pm$ 3                                    | 86                      | 50                                |                           | 4/4                              | 60 x 30 x 3                          | Oak        | Black Knit                | 70           | 3000.00 Pair         |
|                        | Samson                     |  | 15                      |                           |               |                          |              |  | 25-125 $\pm$ 0.5                                 | 91                      | 200                               | Sel.                      | 8/7                              | 30 x 24 x 19                         | Oak        | Black Knit                | 150          | 749.00 Pair          |
| SWAN'S SPEAKER SYSTEMS | Swan III                   | Ducted                                     | (2)5 1/4                |                           |               | 1                        | Horn         |  | 55-20  | 90                      | 75                                | 2.5k                      | 8/7                              | 8 x 6 x 36                           | Opt.       | Foam                      | 30           | From 1795.00 Pair    |
|                        | Swan IV                    | Sat. & Subwoof.                            | (2)10                   | (2)5 1/4                  | Cones         | 1                        | Horn         |  | 25-20  | 90                      | 100                               | 200,2.5k                  | 8/7                              | Four Pieces                          | Opt.       | Foam                      | 240 Sys.     | From 5995.00 Sys.    |
|                        | Swan IV Special Edition    | Sat. & Subwoof.                            | 13 1/4                  | (2)5 1/4                  | Cones         | 1                        | Dome         |  | 23-25  | 90                      | 100                               | 200,3k                    | 8/6                              | Four Pieces                          | Opt.       | Foam                      | 250 Sys.     | From 6995.00 Sys.    |
|                        | Swan V                     | Ducted                                     | (2)5 1/4                |                           |               | 1                        | Dome         |  | 55-25  | 90                      | 100                               | 3k                        | 8/7                              | 8 x 6 x 36                           | Opt.       | Foam                      | 30           | From 2395.00 Pair    |
|                        | Swan VII                   | Ducted                                     | (2)6 1/2                |                           |               |                          | Dome         |  | 40-25  | 90                      | 100                               | 3k                        | 8/7                              | 10 x 8 x 40                          | Opt.       | Foam                      | 40           | From 2995.00 Pair    |
| SYMDEX AUDIO SYSTEMS   | Epsilon Signature          | Ported                                     | 10                      | 7                         | Cone          | 1                        | Dome         |  |  | 88                      |                                   | 100,2.3k                  | 8/4                              | 13 x 13 x 48                         | Opt.       | Black Knit                | 100          | 3000.00 Pair         |
|                        | Gamma Signature            | Ported                                     |                         | 7                         | Cone          | 1                        | Dome         |  |  | 88                      |                                   | 2.3k                      | 8/4                              | 6 x 10 x 44                          | Opt.       | Black Knit                | 40           | 1600.00 Pair         |
| SYNTHESIS              | Reference System           | Bass Ref. Sat. & Subwoof.                  | (2)10                   |                           |               | 1, 1 1/2                 | Dome, Leaf   | W  | 25-35 $\pm$ 3                                    | 91                      | 50                                |                           | 8/4                              | Four Pieces                          | Oiled Oak  | Opt.                      | 350 Sys.     | 7350.00 Sys.         |
|                        | LM310                      | Bass Ref.                                  | 10                      |                           |               | 1                        | Dome         |  | 28-20 $\pm$ 3                                    | 91                      | 20                                | 85,1.25k                  | 8/4                              | 14 x 15 x 44                         | Oiled Oak  | Opt.                      | 90           | w/Xover 3250.00 Pair |
|                        | LM260                      | Bass Ref.                                  | 8                       |                           |               | 1                        | Dome         |  | 42-20 $\pm$ 3                                    | 91                      | 20                                | 1.25k                     | 8/4                              | 11 x 20 x 40                         | Oiled Oak  | Opt.                      | 58           | 1695.00 Pair         |
|                        | LM210                      | Bass Ref.                                  | 6                       |                           |               | 1                        | Dome         |  | 48-20 $\pm$ 3                                    | 89                      | 20                                | 1.5k                      | 8/4                              | 11 x 11 x 34                         | Oiled Oak  | Opt.                      | 42           | 1195.00 Pair         |
|                        | CM205                      | Bass Ref.                                  | 6                       |                           |               | 1                        | Dome         |  | 54-20 $\pm$ 3                                    | 89                      | 20                                | 1.5k                      | 8/4                              | 10 x 11 x 16                         | Oiled Oak  | Opt.                      | 20           | 995.00 Pair          |
| TADDEO                 | Domestic Monitor One       |  | 6 1/2                   |                           |               | 1 1/4                    | Dome         |  | 44-22 $\pm$ 3                                    | 92                      | 20                                | 2k                        | 8/8                              | 40 x 9 x 11                          | Oiled Oak  | Black Knit                | 47           | 849.00 Pair          |
| TANGENT                | 10                         | Inf. Baf.                                  | 8                       |                           |               | 1                        | Horn         |  | 75-20 $\pm$ 3                                    | 94                      | 20                                | 3.5k                      | 6/4.5                            | 16 x 11 x 8                          | Oiled Wal. | Black Knit                | 18 1/2       | 190.00               |
|                        | 20                         | Pas. Rad.                                  | 8                       |                           |               | 1                        | Horn         |  | 42-20 $\pm$ 3                                    | 94                      | 20                                | 1.8k                      | 6/4.5                            | 22 x 13 x 11                         | Oiled Wal. | Black Knit                | 24           | 249.00               |
|                        | 30                         | Inf. Baf.                                  | (2)8                    |                           |               | 1                        | Horn         |  | 50-20 $\pm$ 3                                    | 96                      | 20                                | 1.8k                      | 6/4.5                            | 27 x 14 x 12                         | Oiled Wal. | Black Knit                | 45           | 299.00               |
|                        | 40                         | Pas. Rad.                                  | (2)8                    |                           |               | 1                        | Horn         |  | 42-20 $\pm$ 3                                    | 96                      | 20                                | 1.8k                      | 6/4.5                            | 31 x 14 x 12                         | Oiled Wal. | Black Knit                | 49           | 379.00               |
|                        | 50                         | Pas. Rad.                                  | (3)8                    |                           |               | 1                        | Horn         |  | 44-20 $\pm$ 3                                    | 98                      | 20                                | 2.2k                      | 6/4.5                            | 36 x 14 x 12                         | Oiled Wal. | Black Knit                | 58           | 498.00               |
| TANNOY                 | DC-1000                    | Ducted Port                                | 8                       |                           |               | 1                        | Dome         |  | 48-25 $\pm$ 3                                    | 90                      | 10                                | 2.3k                      | 8/5                              | 10 x 19 x 8                          | Black Ash  | Black Knit                | 17 7/8       | 800.00 Pair          |
|                        | DC-2000                    | Inf. Baf.                                  | 8                       | 8                         | Cone          | 1                        | Dome         |  | 44-25 $\pm$ 3                                    | 92                      | 10                                | 400,2.3k                  | 6/4                              | 10 x 28 x 10                         | Black Ash  | Black Knit                | 44           | 1300.00 Pair         |
|                        | DC-3000                    | Slotted Port                               | 8                       | 8                         | Cone          | 1                        | Dome         |  | 30-25  | 92                      | 10                                | 400,2.3k                  | 6/4                              | 10 x 36 x 12                         | Black Ash  | Black Knit                | 59           | 1900.00 Pair         |
|                        | C-6                        | Ducted Port                                | 6 1/2                   |                           |               | 3/4                      | Dome         |  | 59-20  | 90                      |                                   |                           | 8/6                              | 8 x 12 x 8                           | Black Ash  | Black Knit                | 10           | 349.00 Pair          |
|                        | C-8                        | Ducted Port                                | 8                       |                           |               | 1                        | Dome         |  | 55-20  | 92                      |                                   |                           | 8/6                              | 10 x 19 x 9                          | Black Ash  | Black Knit                | 17 1/2       | 459.00 Pair          |
|                        | C-10                       | Ducted Port                                | 10                      |                           |               | 1                        | Dome         |  | 47-20  |                         |                                   |                           |                                  | 12 x 24 x 11                         | Black Ash  | Black Knit                | 27           | 569.00 Pair          |
|                        | E-11                       | Ducted Port                                | 6 1/2                   |                           |               | 1                        | Dome         |  | 55-20 $\pm$ 3                                    | 88                      | 10                                | 3k                        | 8/6                              | 8 x 15 x 8                           | Black Ash  | Black Knit                | 11 1/2       | 425.00 Pair          |
|                        | M-15                       | Ducted Port                                | 8                       |                           |               | 1                        | Dome         |  | 48-20 $\pm$ 3                                    | 89                      | 10                                | 3k                        | 8/6                              | 10 x 19 x 8                          | Black Ash  | Black Knit                | 15 1/2       | 650.00 Pair          |
|                        | J-30                       | ABR  | 8                       | 8                         | Cone          | 1                        | Dome         |  | 40-20 $\pm$ 3                                    | 90                      | 10                                | 3k                        | 8/6                              | 10 x 28 x 10                         | Black Ash  | Black Knit                | 35           | 1075.00 Pair         |
|                        | J-95                       | Inf. Baf.                                  | 8                       | 8                         | Cone          | 1                        | Dome         |  | 30-20 $\pm$ 3                                    | 90                      | 10                                | 400,3k                    | 8/5                              | 10 x 36 x 12                         | Black Ash  | Black Knit                | 52           | 1500.00 Pair         |
|                        |                            |  |                         |                           |               |                          |              |  |  |                         |                                   |                           |                                  |                                      |            |                           |              |                      |
| TDL                    | Studio 1                   | Trans. Line                                | 6 1/2                   |                           |               | 1                        | Dome         |  | 28-20  | 86                      | 30                                | 3k                        | 8/5                              | 13 x 9 x 33                          | Opt.       | Opt.                      | 40           | 1445.00 Pair         |
|                        | Reference Standard Monitor | Trans. Line                                | (2) 9 1/2 x 6 1/2       | (2)4 1/2                  | Cones         | (3)1                     | Domes        |  | 16-35  | 87                      | 50                                | 200,3.5k, 13k             | 8/5                              | 20 x 22 x 48                         | Wal./Brass | Brown                     | 154          | 6995.00 Pair         |
|                        | Studio 3                   | Trans. Line                                | (2) 9 1/2 x 6 1/2       | 4 1/2                     | Cone          | (2)1                     | Domes        |  | 18-35  | 87                      | 40                                | 300,3.5k, 13k             | 8/5                              | 18 x 12 x 47                         | Wal./Brass | Brown                     | 103          | 4595.00 Pair         |
|                        | Studio 2                   | Trans. Line                                | (2)8                    |                           |               | 1                        | Dome         |  | 20-20  | 87                      | 30                                | 3k                        | 8/5                              | 16 x 12 x 39                         | Wal./Brass | Brown                     | 59           | 1995.00 Pair         |
|                        |                            | Trans. Line                                | 8                       |                           |               | 1                        | Dome         |  | 24-20  | 87                      | 30                                | 3k                        | 8/5                              | 15 x 11 x 35                         | Wal./Brass | Brown                     | 48           | 1595.00 Pair         |

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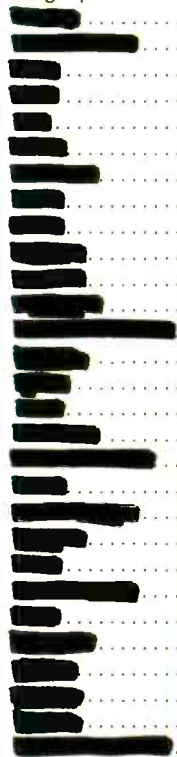
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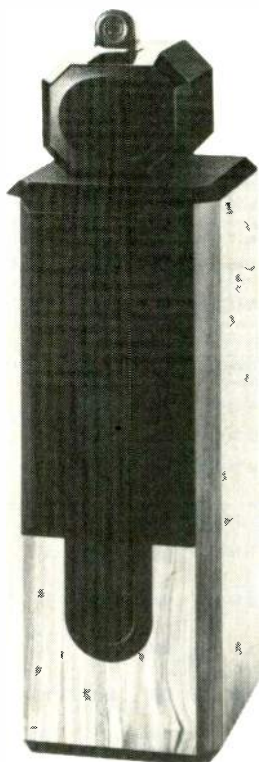
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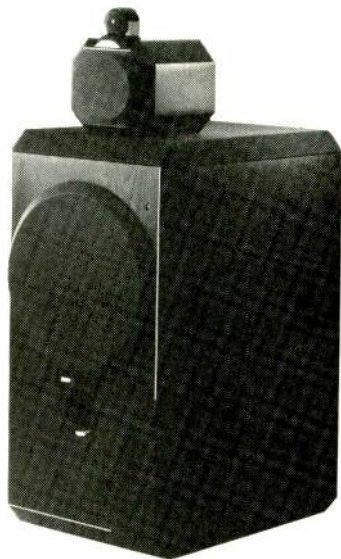
# LOUDSPEAKERS

| MANUFACTURER    | Model                  | Design Principle      | Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T | Amplifier Frequency Response, Hz to kHz, $\pm$ dB | SPL, 1 Watt 1 Meter, dB | Recommended Min. Amp Power, Watts | Impedance, Ohms, Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$    |
|-----------------|------------------------|-----------------------|--------------------------|-------------------------|---------------------------|---------------|--------------------------|--------------|--|---|-------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|---------------------------|--------------|--------------|
| TDL (Continued) | Super Compact Compact  | Bass Ref.             | 8                        |                         |                           | 1             | Dome                     |              | 28-20  | 87  | 25                      | 3k                                | 8/4                              | 22 x 11 x 20                         | Wal./Brass  | Brown                     | 53 Pair      | 1095.00 Pair |
|                 |                        | Bass Ref.             | 6                        |                         |                           | 1             | Dome                     |              | 30-20  | 86  | 20                      | 3k                                | 8/4                              | 12 x 9 x 18                          | Wal./Brass  | Brown                     | 44 Pair      | 935.00 Pair  |
| TEAC            | ST-X1                  | Ac. Sus.              | 6½                       |                         |                           | ¾             | Dome                     |              | 60-22 $\pm$ 3  | 89  | 10                      | 2k                                | 6/                               | 10 x 15 x 7                          | Sim. Oak    | Gray Knit                 | 10 Pair      | 230.00 Pair  |
|                 | ST-X3                  | Ac. Sus.              | 8                        |                         |                           | ¾             | Dome                     |              | 55-22 $\pm$ 3  | 89  | 15                      | 1.5k                              | 6/                               | 12 x 20 x 8                          | Sim. Oak    | Gray Knit                 | 16 Pair      | 319.95 Pair  |
|                 | ST-X5                  | Ac. Sus.              | 10                       | 5                       | Cone                      | ¾             | Dome                     | M            | 45-22 $\pm$ 3  | 90  | 20                      | 1.2k,6k                           | 6/                               | 13 x 30 x 8                          | Sim. Oak    | Gray Knit                 | 29 Pair      | 239.95 Pair  |
| TECHNICOUSTICS  | Alpha II               | Vented                | 6½                       |                         |                           | 1             | Dome                     |              | 48-20 $\pm$ 3  | 90  | 15                      | 5k                                | 8/6.6                            | 20 x 13 x 9                          | Wal. Lam.   | Brown Knit                | 25           | 250.00       |
|                 | Beta                   | Vented                | 10                       |                         |                           | 1             | Dome                     |              | 36-20 $\pm$ 3  | 92  | 15                      | 3.5k                              | 6/3.8                            | 27 x 17 x 11                         | Wal. Lam.   | Brown Knit                | 52           | 399.00       |
|                 | Gamma                  | Vented                | 8                        |                         |                           | 1             | Dome                     |              | 32-20 $\pm$ 3  | 89  | 25                      | 3k                                | 8/5.6                            | 25 x 11 x 17                         | Wal. Lam.   | Brown Knit                | 48           | 450.00       |
|                 | Delta                  | Vented                | 10                       | 5                       | Cone                      | 1             | Dome                     | M,T          | 32-20 $\pm$ 3  | 94  | 25                      | 800,5k                            | 8/                               | 32 x 20 x 13                         | Wal. Lam.   | Brown Knit                | 67           | 600.00       |
|                 | Epsilon                | Vented                | 12                       | 5                       | Cone                      | 3½            | Horn                     | M,T          | 46-20 $\pm$ 3  | 95  | 25                      | 800,5k                            | 8/                               | 32 x 20 x 13                         | Wal. Lam.   | Black Knit                | 70           | 750.00       |
|                 | Rock Master Jr.        | Vented                | 15                       |                         | Horn                      |               | Horn                     |              | 58-20 $\pm$ 3  | 97  | 40                      |                                   | 8/6.3                            | 32 x 20 x 13                         | Black Paint | Black Metal               | 67           | 650.00       |
|                 | Rock Master            | Vented                | 12                       |                         |                           | 4x11          | Horn                     | T            | 39-18 $\pm$ 3  | 92  | 40                      | 3.5k                              | 8/5.8                            | 26 x 16 x 17                         | Black Paint | Black Metal               | 75           | 900.00       |
| TECHNICS        | SB-CX700               | Pas. Rad.             | 12                       | 4                       | Cone                      | 1             | Dome                     | T            | 40-22 $\pm$ 2  | 88  | 60                      |                                   | 6/                               | 35 x 15 x 12                         |             |                           | 55           | 350.00       |
|                 | SB-CX500               | Pas. Rad.             | 10                       | 4                       | Cone                      | 1             | Dome                     | T            | 55-22 $\pm$ 3  | 88  | 40                      |                                   | 6/                               | 32 x 13 x 12                         |             |                           | 40           | 300.00       |
|                 | SB-CX300               | Bass Ref.             | 8                        |                         |                           | 1             | Dome                     |              | 75-20 $\pm$ 4  | 88  | 40                      |                                   | 6/                               | 18 x 11 x 10                         |             |                           | 20           | 200.00       |
|                 | SB-RX50                | Bass Ref.             | 9½                       |                         |                           | 1½            | Flat                     | T            | 30-48  | 87  |                         | 2.2k                              | 6/                               | 12 x 19 x 11                         |             |                           | 36           | 609.00       |
|                 | SB-RX30                | Bass Ref.             | 9                        |                         |                           | 1½            | Flat                     |              | 44-30  | 88  |                         | 2.5k                              | 6/                               | 10 x 15 x 9                          |             |                           | 16           | 549.00       |
|                 | SB-F1MK2K              | Ac. Sus.              | 4¾                       |                         |                           | 1½            | Flat                     |              | 48-35  | 86  |                         | 2k                                | 8/                               | 9 x 5 x 5                            |             |                           | 7            | 319.00       |
|                 | SB-F2MK2K              | Ac. Sus.              | 5½                       |                         |                           | 1½            | Flat                     |              | 55-33  | 88  |                         | 2.5                               | 8/4                              | 11 x 6 x 7                           |             |                           | 7            | 389.00       |
|                 | SB-C250                | Bass Ref.             | 7                        |                         |                           | 1             | Dome                     |              |  |   |                         | 3k                                | 8/                               | 9 x 15 x 8                           |             |                           | 30           | 329.00       |
|                 | SB-S20                 | Ac. Sus.              | 4                        |                         |                           | 1½            | Cone                     |              | 47-30  | 86  |                         | 3k                                | 8/                               |                                      |             |                           | 12           | 99.00        |
|                 | SB-L96                 | Bass Ref.             | 15                       | 4¾                      | Cone                      | 2½            | Cone                     |              | 42-20  | 92  |                         | 3k,5k                             | 8/                               | 18 x 31 x 13                         |             |                           | 41           | 169.00       |
|                 | SB-L76                 | Bass Ref.             | 12                       | 4                       | Cone                      | 2½            | Cone                     |              | 43-20  | 92  |                         | 2.5k,5k                           | 8/                               | 14 x 27 x 13                         |             |                           | 53           | 239.00       |
|                 | SB-L56                 | Bass Ref.             | 10                       | 4                       | Cone                      | 2½            | Cone                     |              | 47-20  | 92  |                         | 2.5k,5k                           | 8/                               | 13 x 26 x 11                         |             |                           | 42           | 199.00       |
| SB-L36          | Bass Ref.              | 10                    |                          |                         | 2½                        | Cone          |                          | 57-20        | 92   |   | 4k                      | 8/                                | 13 x 23 x 9                      |                                      |             | 34                        | 129.00       |              |
| TERPSICHORE     | QT-1                   | Trans. Line           | 5½                       |                         |                           | 1¾            | Inv. Dome                |              | 50-20  | 89  | 50                      |                                   | 6/3                              | 8 x 10 x 40                          | Opt.        | Opt.                      | 48           | 2000.00      |
|                 | QT-2                   | Trans. Line           | 7                        |                         |                           | 1¾            | Inv. Dome                |              | 40-20  | 90  | 100                     |                                   | 6/3                              | 10 x 15 x 44                         | Opt.        | Opt.                      | 90           | 2500.00      |
|                 | Bifocal                | Trans. Line Woofer    | (2)8                     |                         |                           |               |                          |              | 25-1   |   | 100                     |                                   | 8/4                              | 20 x 10 x 40                         | Opt.        | Opt.                      | 90           | 1200.00      |
| THIEL           | CS 5                   |                       | (3)8                     | 5, 2                    | Cone, Dome                | 1             | Dome                     |              | 23-20 $\pm$ 1  | 87  | 100                     | 80,400, 1k,3k                     | 3/2                              | 13 x 17 x 64                         | Opt.        | Black Knit                | 180          | 9700.00      |
|                 | CS 3.5                 | Electr.               | 10                       | 4                       | Cone                      | 1             | Dome                     |              | 20-20 $\pm$ 2  | 88  | 40                      | 400,3k                            | 4/4                              | 13 x 13 x 41                         | Teak        | Black Cloth               | 75           | 2450.00      |
|                 | CS 2                   | Bass Ref.             | 8                        | 3                       | Cone                      | 1             | Dome                     |              | 38-20 $\pm$ 2  | 87  | 40                      | 800,3k                            | 6/5                              | 12 x 12 x 39                         | Teak        | Black Cloth               | 62           | 1650.00      |
|                 | CS 1.2                 | Bass Ref.             | 6½                       |                         |                           | 1             | Dome                     |              | 52-18 $\pm$ 2  | 87  | 40                      | 2.5k                              | 4/4                              | 10 x 10 x 36                         | Teak        | Black Cloth               | 47           | 1090.00      |
| TNT-LINES       | B1                     | Bass Ref.             | 7                        |                         |                           | 1½            | Inv. Dome                |              | 45-20 $\pm$ 3  | 89  | 30                      | 450,3k                            | 8/3.4                            | 14 x 9 x 6                           | Opt., Wood  | Brown Knit                | 24           | 695.00       |
|                 | B2K                    | Bass Ref.             | 7                        |                         |                           | 1½            | Inv. Dome                |              | 40-20 $\pm$ 3  | 90  | 50                      | 350,3k                            | 8/3.4                            | 16 x 11 x 14                         | Opt., Wood  | Brown Knit                | 32           | 950.00       |
|                 | T3K                    | Trans. Line           | 10                       | 5¼                      | Cone                      | 1½            | Inv. Dome                |              | 25-20 $\pm$ 3  | 91  | 60                      | 450,3.5k                          | 8/6.8                            | 48 x 12 x 24                         | Oak         | None                      | 125          | 3995.00      |
|                 | T2K                    | Trans. Line           | 8                        | 5¼                      | Cone                      | 1½            | Inv. Dome                |              | 33-20 $\pm$ 3  | 90  | 60                      | 450,3.5k                          | 8/6.8                            | 46 x 10 x 23                         | Oak         | None                      | 115          | 2995.00      |
| TOWNSHEND AUDIO | Glastonbury II         | Bass Ref.             | 4¾                       |                         |                           | ½x4           | Leaf                     |              | 20-50 $\pm$ 2  | 88  | 12                      | 8.7k                              | 8/7.5                            | 11 x 18 x 35                         | Black Text. | Black Knit                | 125          | 3800.00      |
| TRIAD DESIGN    | System Six Woofer      | Powered Woofer        | 8                        |                         |                           |               |                          | W            | 40-140 $\pm$ 3   | 90  | 70                      | Inc. 70                           | 8/8                              | 10 x 10 x 10                         | Opt.        | Opt.                      | 16           | 300.00       |
|                 | System Seven Woofer    | Powered Woofer        | 12                       |                         |                           |               |                          | W            | 28-110 $\pm$ 3   | 90  |                         |                                   | 8/8                              | 13 x 13 x 13                         | Opt.        | Opt.                      | 24           | 450.00       |
|                 | System Six Satellite   | Inf. Bat. Sat.        |                          | 3½                      | Cone                      | ¾             | Dome                     |              | 165-20 $\pm$ 2   | 89  | 20                      | 3.2k                              | 8/4                              | 4 x 4 x 7                            | Opt.        | Opt.                      | 3            | 300.00       |
|                 | System Seven Satellite | Inf. Bat. Sat.        |                          | 5                       | Cone                      | 1             | Dome                     |              | 140-20 $\pm$ 2   | 88  | 20                      | 2.5k                              | 8/6                              | 6 x 6 x 10                           | Opt.        | Opt.                      | 7            | 450.00       |
|                 | System Six             | Sat. & Powered Woofer | 8                        | 3½                      | Cone                      | ¾             | Dome                     | W            | 40-20 $\pm$ 3  | 89  | 20                      | 150,3.2k                          | 8/4                              | Three Pieces                         | Opt.        | Opt.                      | 23 Sys.      | 600.00       |
|                 | System Seven           | Sat. & Powered Woofer | 12                       | 5                       | Cone                      | 1             | Dome                     | W            | 28-20 $\pm$ 3  | 88  | 20                      | 120,2.5k                          | 8/6                              | Three Pieces                         | Opt.        | Opt.                      | 42 Sys.      | 900.00       |
|                 | System Ten             | Inf. Bat.             | 10                       | 4                       | Cone                      | 1             | Dome                     |              | 35-18 $\pm$ 2  | 89  | 35                      | 900,4.4k                          | 8/5                              | 17 x 12 x 43                         | Opt., Wood  | Opt., White               | 65           | 2500.00      |
| (Continued)     |                        |                       |                          |                         |                           |               |                          |              |  |   |                         |                                   |                                  |                                      |             |                           |              |              |

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# LOUDSPEAKERS

| MANUFACTURER             | Model                     | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type              | Separate Level Control | Magnetic Frequency Response, Hz to Hz, ± dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish     | Grille Color and Material | Weight, Lbs. | Price, \$            |
|--------------------------|---------------------------|--|-------------------------|---------------------------|---------------|--------------------------|---------------------------|------------------------|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|------------|---------------------------|--------------|----------------------|
| TRIAD DESIGN (Continued) | In-Wall System Six        | In-Wall Sat. & Powered Woofer              | 8                       | 3½                        | Cone          | ¾                        | Dome                      | W                      | 42-20 ± 3                                   | 89                      | 20                                | 160,3.2k                  | 8/4                              | Three Pieces                         |            | Opt.                      | 20 Sys.      | 600.00 Sys.          |
|                          | In-Wall System Seven      | In-Wall Sat. & Powered Woofer              | 12                      | 5                         | Cone          | 1                        | Dome                      | W                      | 38-20 ± 3                                   | 88                      | 20                                | 120,2.5k                  | 8/6                              | Three Pieces                         |            | Opt.                      | 40 Sys.      | 900.00 Sys.          |
|                          | In-Wall System Six Woofer | In-Wall Powered Woofer                     | 8                       |                           |               |                          |                           | W                      | 42-160                                      | 90                      | 70 Inc.                           | 8/6                       |                                  |                                      |            | Opt., White               | 16           | 300.00               |
|                          | Triad In-Wall             | In-Wall Powered Woofer                     | 12                      |                           |               |                          |                           | W                      | 38-120                                      | 92                      | 70 Inc.                           | 8/6                       |                                  |                                      |            | Opt., White               | 24           | 450.00               |
| UNITY AUDIO              | CLA 1                     | Bass Ref.                                  | 10                      | 6½                        | Cone          | 1                        | Dome                      | No                     | 34-20 ± 2                                   | 89                      | 40                                | 175,2.2k                  | 8/5                              | 9 x 10 x 44                          | Oak        | Black Knit                | 55           | 1695.00 Pair         |
|                          | CLA 2                     | Bass Ref.                                  | 8                       | 6½                        | Cone          | 1                        | Dome                      | No                     | 43-20 ± 2                                   | 89                      | 40                                | 175,2.2k                  | 8/5                              | 9 x 10 x 39                          | Oak        | Black Knit                | 45           | 1195.00 Pair         |
|                          | CLA 3                     | Bass Ref.                                  | 8                       |                           |               | 1                        | Dome                      |                        | 47-20 ± 2                                   | 88                      | 40                                | 2.2k                      | 8/7                              | 9 x 5 x 38                           | Oak        | Black Knit                | 30           | 850.00 Pair          |
|                          | PARM                      | Biamp, Sat. & Subwoof.                     | (2)13                   | (2)7                      | Cones         | 1¼                       | Dome                      |                        | 23-22 ± 1.5                                 | 90                      |                                   | 120,2k                    | 6/3                              | Three Pieces                         | Corian     | Black Knit                | 400 Sys.     | 15,000 Sys.          |
|                          | CLA Signature             | Bass Ref.                                  | 11                      | 7                         | Cone          | 1½                       | Dome                      |                        | 30-21 ± 2                                   | 90                      | 100                               | 135,2k                    | 7/5                              | 9 x 10 x 43                          | Opt.       | Black Knit                | 68           | w/Xover 2750.00 Pair |
| VANDERSTEEN AUDIO        | 1B                        | Trans. Line                                | 8                       |                           |               | 1                        | Dome                      | T                      | 38-20 ± 3                                   | 90                      | 20                                | 2.8k                      | 8/6                              | 12 x 10 x 36                         | Opt., Wood | Opt., Knit                | 50           | 650.00 Pair          |
|                          | 2Ci                       |  | 10,8                    | 4½                        | Cone          | 1                        | Dome                      | M,T                    | 29-21 ± 3                                   | 88                      | 40                                | 500,5k                    | 8/4                              | 16 x 10 x 36                         | Opt., Wood | Opt., Knit                | 63           | 1195.00 Pair         |
|                          | 3                         | Third Order Biamp.                         | 10,8                    | 4½                        | Cone          | 1                        | Dome                      | M,T                    | 28-40 ± 3                                   | 88                      | 100                               | 80,500,5k                 | 8/6                              | 16 x 10 x 48                         | Opt., Wood | Opt., Knit                | 90           | 2395.00 Pair         |
|                          | 4A                        | Inf. Bal. Powered Inf. Bal. Subwoof.       | (2)12, 8 (3)8           | 4½                        | Cone          | 1½,¾                     | Domes                     | M,T                    | 26-30 ± 3                                   | 88                      | 100                               | 80,500, 5k,13k 80         | 8/4                              | 18 x 17 x 52                         | Opt., Wood | Opt., Knit                | 150          | 4250.00 Pair         |
|                          | 2W                        |  |                         |                           |               |                          |                           | W                      | 26-80 ± 3                                   |                         | 300 Inc.                          |                           |                                  | 18 x 17 x 18                         | Opt., Wood | Opt., Knit                | 90           | 1250.00 w/Amp        |
|                          |                           |  |                         |                           |               |                          |                           |                        |   |                         |                                   |                           |                                  |                                      |            |                           |              |                      |
| VECTOR RESEARCH          | VSP-82                    | Inf. Bal.                                  | 8                       |                           |               | 2                        | Cone                      | No                     | 40-17.5 +3,-4                               | 89                      | 10                                | 2k                        | 8/                               | 19 x 11 x 8                          | Oak        | Black Knit                | 29 Pair      | 79.95                |
|                          | VSP-102                   | Bass Ref.                                  | 10                      |                           |               | 1                        | Dome                      | No                     | 30-20 +2,-2.5                               | 91                      | 10                                | 3.5k                      | 8/                               | 27 x 13 x 11                         | Oak        | Black Knit                | 26           | 149.95               |
|                          | VSP-123                   | Bass Ref.                                  | 12                      | 5                         | Cone          | 1                        | Dome                      | No                     | 20-20 ± 3                                   | 92                      | 10                                | 500,3.5k                  | 8/                               | 27 x 14 x 11                         | Oak        | Black Knit                | 37           | 199.95               |
|                          | VSP-124                   | Pas. Rad.                                  | 12                      | 5                         | Cone          | 1                        | Dome                      | No                     | 20-20 +3,-2                                 | 92                      | 10                                | 500,3.5k                  | 8/                               | 39 x 14 x 12                         | Oak        | Black Knit                | 47           | 259.95               |
| VELODYNE ACOUSTICS       | VA1012                    | Powered Subwoof.                           | 10                      |                           |               |                          |                           | W                      | 25-75 ± 3                                   | 60 Inc.                 | 75                                |                           |                                  | 18 x 18 x 16                         | Black      | Black Knit                | 40           | 645.00 w/Amp         |
|                          | Servo 1200                | Powered Servo Subwoof.                     | 12                      |                           |               |                          |                           | W                      | 20-Var.                                     | 100 Inc.                | 40-100                            |                           |                                  | 18 x 18 x 16                         | Black      | Black Knit                | 55           | 895.00 w/Amp         |
|                          | ULD-12                    | Powered Servo Subwoof.                     | 12                      |                           |               |                          |                           | W                      | 15-85 ± 3                                   | 100 Inc.                | 85                                |                           |                                  | 21 x 16 x 17                         | Opt.       | None                      | 51           | 1195.00 w/Amp        |
|                          | ULO-15                    | Powered Servo Subwoof.                     | 15                      |                           |               |                          |                           | W                      | 15-85 ± 3                                   | 400 Inc.                | 85                                |                           |                                  | 22 x 17 x 18                         | Opt.       | None                      | 76           | 1795.00 w/Amp        |
|                          | ULD-18                    | Powered Servo Subwoof.                     | 18                      |                           |               |                          |                           | W                      | 15-85 ± 3                                   | 400 Inc.                | 85                                |                           |                                  | 23 x 31 x 21                         | Opt.       | None                      | 105          | 2595.00 w/Amp        |
| VENTURI                  | V62                       | Venturi Vented                             | 6                       |                           |               | ¾                        | Dome                      |                        | 52-20 ± 3                                   | 90                      | 20                                | 4k                        | 8/                               | 14 x 9 x 9                           | Opt., Lam. | Black Knit                | 14           | 199.00 Pair          |
|                          | V620                      | Venturi Vented                             | 6                       |                           |               | ¾                        | Dome                      |                        | 49-20 ± 3                                   | 90                      | 20                                | 3k                        | 8/                               | 23 x 9 x 11                          | Opt., Lam. | Black Knit                | 24           | 329.00 Pair          |
|                          | V820                      | Venturi Vented                             | 8                       |                           |               | 1                        | Dome                      |                        | 40-22 ± 3                                   | 91                      | 20                                | 2.5k                      | 8/                               | 27 x 10 x 12                         | Opt., Lam. | Black Knit                | 29           | 439.00 Pair          |
|                          | V630                      | Venturi Vented                             | 6                       | 6                         | Cone          | 1                        | Dome                      |                        | 49-22 ± 3                                   | 90                      | 20                                | 1.5k,5k                   | 6/                               | 34 x 9 x 11                          | Opt., Lam. | Black Knit                | 37           | 599.00 Pair          |
|                          | V830                      | Venturi Vented                             | 8                       | 6                         | Cone          | 1                        | Dome                      |                        | 40-22 ± 3                                   | 91                      | 30                                | 1k,5k                     | 8/                               | 40 x 10 x 12                         | Opt., Lam. | Black Knit                | 45           | 799.00 Pair          |
|                          |                           |  |                         |                           |               |                          |                           |                        |   |                         |                                   |                           |                                  |                                      |            |                           |              |                      |
| VINTEC ACOUSTICS         | Valour                    | Vented                                     | 6½                      |                           |               | 1                        | Dome                      |                        | 60-21 ± 1.25                                | 86                      | 30                                | 1.8k                      | 8/5                              | 16 x 9 x 12                          | Oak        | Black Knit                | 27           | 1000.00 Pair         |
|                          | Vibrato                   | Vented, Subwoof.                           | (2)10                   |                           |               |                          |                           |                        | 26-150 ± 2                                  | 86                      | 30                                | 90                        | 8/4                              | 22 x 18 x 18                         | Oak        | Black Knit                | 70           | 1100.00              |
|                          | Vanguard                  | Vented                                     | (2)6½                   |                           |               | 1½                       | Dome                      |                        | 58-20 ± 1.5                                 | 91                      | 30                                | 1.5k                      | 5/3                              | 38 x 10 x 12                         | Oak        | Black Knit                | 70           | 1800.00 Pair         |
|                          | Vesuvius                  | Vented Subwoof.                            | (4)10                   |                           |               |                          |                           |                        | 20-150 ± 2                                  | 91                      | 30                                | 90                        | 4/2                              | 33 x 22 x 22                         | Oak        | Black Knit                | 160          | 2300.00              |
| VMPS                     | QSO 404                   | Ported                                     | 8                       |                           |               | 1                        | Dome                      | T                      | 48-17 +0,-3                                 | 90                      | 20                                | 3.5k                      | 8/6                              | 18 x 12 x 9                          | Oiled Wal. | Black Cloth               | 25           | 229.00               |
|                          | Mini Tower IIa            | Pas. Rad.                                  | (2)10                   | 5                         | Cone          | (2)1                     | Dome, Piezo Domes, Ribbon | M,T, ST, ST            | 28-30 +0,-3                                 | 92                      | 20                                | 500,4.5k, 15k             | 8/6                              | 39 x 12 x 15                         | Opt., Wood | Black Cloth               | 70           | 479.00               |
|                          | Super Tower III           | Pas. Rad.                                  | (2)15, 12, (2)10        | (4)5                      | Cones         | (4)1, ¾x3                |                           | M,T, ST                | 17-50 +0,-3                                 | 98                      | 20                                | 80,500, 4.5k,15k          | 8/6                              | 72 x 17 x 19                         | Opt., Wood | Black Cloth               | 300          | 4795.00 Pair         |
|                          | QSO 808                   | Ported                                     | (2)10 12                | 5                         | Cone          | 1                        | Dome                      | M,T                    | 34-20 ± 3                                   | 94                      | 20                                | 600,5k                    | 8/6                              | 26 x 15 x 12                         | Oiled Wal. | Black Knit                | 50           | 690.00 Pair          |
| (Continued)              | Tower II/R                | Multiband Bass                             | (3)12                   | 5                         | Cone          | 1,(1)                    | Dome, Ribbon              | M,T, ST                | 22-50 ± 3                                   | 95                      | 20                                | 80,400,4k, 12k            | 8/6                              | 43 x 15 x 15                         | Oiled Wal. | Black Knit                | 95           | 1329.00 Pair         |

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# LOUDSPEAKERS

| MANUFACTURER             | Model                             | Design Principle        | Enclosure or System Type |                           |               |                          | Tweeter Type   | Separate Low Controls? Woofer = W, Midrange = M, Tweeter = T, Subwoofer = ST | Anechoic Frequency Response, Hz to kHz, ±dB | SPL, 1 Watt/1 Meter, dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance, Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish      | Grille Color and Material | Weight, Lbs. | Price, \$            |
|--------------------------|-----------------------------------|-------------------------|--------------------------|---------------------------|---------------|--------------------------|----------------|--|---|-------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------|---------------------------|--------------|----------------------|
|                          |                                   |                         | Woofer Diameter, Inches  | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches |                |  |   |                         |                                   |                           |                                  |                                      |             |                           |              |                      |
| VMPS (Continued)         | Super Tower/R                     | Multiband Bass          | (2)15, 12                | (2)5                      | Cones         | (2)1, (2)2               | Domes, Ribbons | M,T, ST  | 20-50 ±3                                    | 96                      | 20                                | 80,400,4k, 12k            | 8/6                              | 49 x 22 x 17                         | Oiled Wal.  | Black Knit                | 150          | 1938.00 Pair         |
|                          | Super Tower IIa/R Special Edition | Multiband Bass          | (2)15, (3)12             | (4)5                      | Cones         | (5)1, (1)                | Domes, Ribbons | M,T, ST  | 17-50 ±3                                    | 100                     | 20                                | 80,400,4k, 12k            | 8/6                              | 76 x 22 x 17                         | Oiled Wal.  | Black Knit                | 250          | 3876.00 Pair         |
|                          | Smaller Subwoofer                 | Pas. Rad. Subwoof.      | 12                       |                           |               |                          |                |  | 28-600 ±3                                   | 92                      | 20                                | Var.                      | 8/6                              | 26 x 15 x 16                         | Oiled Wal.  | Black Knit                | 52           | 299.00               |
|                          | Original Subwoofer                | Pas. Rad. Subwoof.      | 12                       |                           |               |                          |                |  | 19-600 ±3                                   | 94                      | 20                                | Var.                      | 8/6                              | 27 x 22 x 17                         | Oiled Wal.  | Black Knit                | 95           | 399.00               |
|                          | Larger Subwoofer                  | Pas. Rad. Subwoof.      | 15, 12                   |                           |               |                          |                |  | 17-250 ±3                                   | 95                      | 20                                | Var.                      | 4/3                              | 39 x 22 x 17                         | Oiled Wal.  | Black Knit                | 140          | 549.00               |
| WALLSPEAKER TECHNOLOGIES | Series II                         | Vented/Trans. Line      | 7                        |                           |               | 1                        | Inv. Dome      | T  | 42-17.5 ±3                                  | 89                      | 25                                | 2k                        | 8/5                              | 13 x 3 x 49                          | Gran.       | Opt.                      | 45           | 1650.00 Pair         |
|                          | Series III                        | Vented/Trans. Line      | 8                        | 5                         | Cone          | 1                        | Inv. Dome      | M,T  | 37-18 ±3                                    | 90                      | 25                                | 300,3.5k                  | 8/3                              | 13 x 3 x 73                          | Gran.       | Opt.                      | 57           | 2450.00 Pair         |
| WATERWORKS ACOUSTICS     | Soundpipe One                     | Sealed Sat.             | 5                        |                           |               | ½                        | Cone/Dome      |  | 80-20 ±3                                    | 88                      | 10                                | 5k                        | 8/6                              | 13 x 6 x 8                           | Opt.        | Steel                     | 6            | 349.00 Pair          |
|                          | Soundpipe Two                     | Sealed Sat.             | (2)5                     |                           |               | ¾                        | Cone/Dome      |  | 70-20 ±3                                    | 90                      | 10                                | 5k                        | 4/3                              | 22 x 6 x 8                           | Opt.        | Steel                     | 10           | 649.00 Pair          |
|                          | Soundpipe Sub                     | Sealed Subwoof.         | 10                       |                           |               |                          |                |  | 30-100 ±3                                   | 90                      | 10                                | 100                       | 6/3                              | 16 Dia. x 18                         | Opt., Enam. | Steel                     | 35           | 449.00               |
| WAVEFORM RESEARCH        | The Waveform Loudspeaker          | Bass Ref.               | 15                       | (2)6½                     | Cones         | 1⅞                       | Dome, Ribbon   | W  | 28-20 ±1                                    | 90                      | 150                               | 150,2k,9k                 | 8/4                              | 20 x 30 x 48                         | Black Enam. | Black Knit                | 180          | 9800.00 Pair w/Xover |
| WENGER/ALS               | 1104CM                            | Pas. Rad. Ceiling Mount | 10                       | 5                         | Cone          | (2)1                     | Domes          |  | 32-20 ±3                                    | 91                      | 100                               | 650,5k                    | 6/4                              | 24 x 24 x 15                         | Opt.        | Knit                      | 54           | 859.00 Pair          |
|                          | 1104                              | Pas. Rad.               | 10                       | 5                         | Cone          | (2)1                     | Domes          |  | 32-20 ±3                                    | 91                      | 50                                | 650,5k                    | 6/4                              | 16 x 13 x 9                          | Opt.        | Black Knit                | 35           | 857.00 Pair          |
|                          | 1124                              | Pas. Rad.               | 12                       | 5                         | Cone          | (2)1                     | Domes          |  | 25-20 ±3                                    | 93                      | 50                                | 500,5k                    | 6/4                              | 34 x 15 x 11                         | Black       | Black Knit                | 57           | 987.00 Pair          |
|                          | 1154SW                            | Pas. Rad. Subwoof.      | 15                       |                           |               |                          |                |  | 20-800 ±3                                   | 95                      | 150                               |                           | 6/4                              | 34 x 19 x 15                         | Black       | Black Knit                | 65           | 499.00               |
|                          | 2154                              | Pas. Rad. Subwoof.      | (2)15                    |                           |               |                          |                |  | 20-800 ±3                                   | 98                      | 150                               |                           | 6/4                              | 32 x 34 x 19                         | Black       | Black Knit                | 125          | 813.00               |
|                          | 4154                              | Pas. Rad. Subwoof.      | (4)15                    |                           |               |                          |                |  | 20-800 ±3                                   | 101                     | 250                               |                           | 6/4                              | 33 x 33 x 33                         | Black       | Black Knit                | 250          | 1546.00              |
|                          | 1154S                             | Triamped Pas. Rad.      | 15                       | 10                        | Cone          | (2)5, 2                  | Cones, Compr.  | T  | 32-20 ±3                                    | 94                      | 400                               | 125,1.4k, 5k              | 6/4                              | 33 x 23 x 18                         | Opt.        | Opt.                      | 165          | 3500.00 Pair         |
| WEST COAST AUDIO         | LS 220                            | Ac. Sus.                | 5¼                       |                           |               | ¾                        | Dome           |  |   |                         |                                   | 2.75k                     | 4/                               | 7 x 10 x 10                          | Black Lam.  | Gray Knit                 | 22 Pair      | 220.00 Pair          |
|                          | LS 320                            | Ac. Sus.                | (2)5¼                    |                           |               | ¾                        | Dome           |  |   |                         |                                   | 2.75k                     | 8/                               | 7 x 11 x 16                          | Black Lam.  | Gray Knit                 | 36 Pair      | 320.00 Pair          |
|                          | SB 170                            | Subwoof.                | 8                        |                           |               |                          |                |  |   |                         |                                   | 150                       | 4/                               | 15 x 15 x 17                         | Black Lam.  |                           |              | 170.00               |
|                          | SB 270                            | Subwoof.                | (2)8                     |                           |               |                          |                |  |   |                         |                                   | 150                       | 8/                               | 15 x 28 x 17                         | Black Lam.  |                           |              | 270.00               |
|                          | LS 720                            | Ac. Sus.                | (2)6½                    | 5¼                        | Cone          | ¾                        | Dome           |  |   |                         |                                   | 150,2.75k                 | 8/                               | 8 x 14 x 40                          | Black Lam.  | Gray Knit                 |              | 720.00 Pair          |
|                          | LS 920                            | Biamp. Ac. Sus.         | (2)8                     | 6½                        | Cone          | ¾                        | Dome           |  |   |                         |                                   | 80,2.75k                  | 8/                               | 10 x 16 x 46                         | Black Lam.  | Gray Knit                 |              | 920.00 Pair          |
|                          | LS 2000                           | Biamp. Line Source      | (4)8                     | (4)5¼                     | Cones         | (4)¾                     | Domes          |  |   |                         |                                   | 80,2.75k                  | 4/                               | Four Pieces                          | Black Lam.  | Gray Knit                 |              | 2000.00 Sys.         |
|                          | LS 4000                           | Biamp. Line Source      | (8)8                     | (8)5¼                     | Cones         | (8)¾                     | Domes          |  |   |                         |                                   | 80,2.75k                  | 8/                               | Four Pieces                          | Black Lam.  | Gray Knit                 |              | 4000.00 Sys.         |
| WESTLAKE AUDIO           | BBSM-4/4F                         | Ported                  | (2)4                     |                           |               | ¾                        | Dome           |  | 65-20 ±3                                    | 89                      | 25                                | 1.5k                      | 4/2                              | 8 x 15 x 10                          | Opt.        | Opt.                      | 25           | 775.00               |
|                          | BBSM-5/5F                         | Ported                  | (2)5                     |                           |               | 1¼                       | Dome           |  | 63-18 ±3                                    | 90                      | 25                                | 1.2k                      | 4/2                              | 11 x 18 x 10                         | Opt.        | Opt.                      | 35           | 900.00               |
|                          | BBSM-6/6F                         | Ported                  | (2)6                     | 3½                        | Cone          | 1                        | Dome           |  | 60-20 ±3                                    | 91                      | 50                                | 600,6k                    | 4/2                              | 11 x 22 x 13                         | Opt.        | Opt.                      | 53           | 1200.00              |
|                          | BBSM-8/8F                         | Ported                  | (2)8                     | 3½                        | Cone          | 1                        | Dome           |  | 65-18 ±3                                    | 92                      | 50                                | 600,5k                    | 4/2                              | 13 x 26 x 17                         | Opt.        | Opt.                      | 77           | 1525.00              |
|                          | BBSM-10/10F                       | Ported                  | (2)10                    | 6½                        | Cone          | 1¼                       | Dome           |  | 50-16 ±3                                    | 94                      | 75                                | 600,4k                    | 4/2                              | 16 x 30 x 22                         | Opt.        | Opt.                      | 115          | 1975.00              |
|                          | BBSM-10VF                         | Ported                  | (2)10                    | 6½                        | Cone          | 1¼                       | Dome           |  | 45-16 ±3                                    | 94                      | 75                                | 600                       | 4/2                              | 44 x 27 x 17                         | Opt.        | Opt.                      | 175          | 2375.00              |
|                          | BBSM-12/12F                       | Ported                  | (2)12                    | 6½                        | Cone          | 1¼                       | Dome           |  | 50-16 ±3                                    | 94                      | 100                               | 500,4k                    | 4/2                              | 19 x 34 x 23                         | Opt.        | Opt.                      | 160          | 2275.00              |
|                          | BBSM-12VF                         | Ported                  | (2)12                    | 6½                        | Cone          | 1¼                       | Dome           |  | 40-16 ±3                                    | 89                      | 100                               | 500,4k                    | 4/2                              | 48 x 30 x 19                         | Opt.        | Opt.                      | 240          | 2725.00              |
|                          | BBSM-15/15F                       | Ported                  | (2)15                    | 10                        | Cone          | 1                        | Horn           |  | 50-15 ±3                                    | 98                      | 150                               | 350,1.6k                  | 4/2                              | 27 x 41 x 25                         | Opt.        | Opt.                      | 345          | 4800.00              |
|                          | SM-1/1F                           | Quadamp, Ported         | (2)18                    | 12                        | Cone          | 2, 1½                    | Horns          |  | 28-20 ±3                                    | 104                     | 100                               | 200,800, 3.2k, 10k        | 4/2                              | 39 x 49 x 32                         | Opt.        | Opt.                      | 450          | 16,625.              |
|                          | TM-3/3F                           | Biamp, Ported           | (2)15                    | 2                         | Horn          | 2, 1                     | Horns          |  | 34-16 ±3                                    | 97                      | 180                               | 800,4k                    | 4/2                              | 30 x 44 x 20                         | Opt.        | Opt.                      | 325          | 6775.00              |
|                          | TM-3VF                            | Biamp, Ported           | (2)15                    | 2                         | Horn          | 2, 1                     | Horns          |  | 34-16 ±3                                    | 97                      | 180                               | 800,4k                    | 4/2                              | 44 x 34 x 21                         | Opt.        | Opt.                      | 370          | 7525.00              |
|                          | HR-1/1F                           | Quadamp, Ported         | (2)15                    | 10                        | Cone          | 2, 1                     | Horns          |  | 34-16 ±3                                    | 97                      | 100                               | 250,1k, 5.2k              | 4/2                              | 31 x 44 x 21                         | Opt.        | Opt.                      | 350          | 7625.00              |
|                          | HR-1VF                            | Quadamp, Ported         | (2)15                    | 10                        | Cone          | 2, 1                     | Horns          |  | 34-16 ±3                                    | 97                      | 100                               | 250,1k, 5.2k              | 4/2                              | 48 x 34 x 21                         | Opt.        | Opt.                      | 375          | 8625.00              |
|                          | HR-7UF/7U/7F                      | Quadamp, Ported         | (2)12                    | 10                        | Cone          | 1½                       | Horns          |  | 48-20 ±3                                    | 95                      | 100                               | 400,1.8k, 7.2k            | 4/2                              | 24 x 38 x 18                         | Opt.        | Opt.                      | 185          | 5975.00              |

# LOUDSPEAKERS

| MANUFACTURER             | Model                  | Design Principle, Enclosure or System Type | Woofer Diameter, Inches | Midrange Diameter, Inches | Midrange Type | Tweeter Diameter, Inches | Tweeter Type | Separate Level Controls: Woofer - W, Midrange - M, Tweeter - T, Superwoofer - ST | Anechoic Frequency Response, Hz to KHz, ±dB | SPL, 1 Watt/1 Meter, ±dB | Recommended Min. Amp Power, Watts | Crossover Frequencies, Hz | Impedance Ohms: Nominal/Minimum | Dimensions, Inches (To Nearest Inch) | Finish                | Grille Color and Material | Weight, Lbs. | Price, \$             |
|--------------------------|------------------------|--|-------------------------|---------------------------|---------------|--------------------------|--------------|--|---|--------------------------|-----------------------------------|---------------------------|---------------------------------|--------------------------------------|-----------------------|---------------------------|--------------|-----------------------|
| WHARFEDALE               | 504.2                  | Tuned Port                                 | 4                       |                           |               | ¾                        | Dome         |  | 48-22 ±3                                    | 86                       | 20                                | 3.5k                      | 8/6.4                           | 11 x 7 x 8                           | Black Vinyl           | Black Knit                | 20 Pair      | 200.00                |
|                          | 505.2                  | Inf. Baf.                                  | 8                       |                           |               | ¾                        | Dome         |  | 42-22 ±3                                    | 87                       | 20                                | 5k                        | 8/6.4                           | 17 x 10 x 9                          | Black Vinyl           | Black Knit                | 24 Pair      | 280.00                |
|                          | Coleridge              | Ported                                     | 8                       |                           | 1             | Dome                     |              |  | 45-20 ±3                                    | 89                       | 30                                |                           | 8/                              | 18 x 10 x 10                         | Black Vinyl           | Gray Knit                 | 30           | 700.00                |
|                          | Harewood               | Ported                                     | 8                       |                           | 1             | Dome                     |              |  | 40-20 ±3                                    | 89                       | 30                                |                           | 8/                              | 22 x 10 x 10                         | Black Ash             | Gray Knit                 | 36           | 1000.00               |
|                          | Delta 30               | Tuned Port                                 | 6½                      |                           |               | ¾                        | Dome         |  | 45-20 ±3                                    | 89                       | 15                                | 5k                        | 8/6.4                           | 15 x 8 x 6                           | Black Oak             | Black Knit                | 17½ Pair     | 135.00                |
|                          | Delta 50               | Inf. Baf.                                  | 8                       |                           |               | ¾                        | Dome         |  | 45-20 ±3                                    | 89                       | 15                                | 5k                        | 8/6.4                           | 18 x 10 x 8                          | Black Oak             | Black Knit                | 26¾ Pair     | 175.00                |
|                          | Delta 70               | Tuned Port                                 | 8                       |                           |               | ¾                        | Dome         |  | 40-20 ±3                                    | 89                       | 15                                | 3.5k                      | 8/6.4                           | 21 x 11 x 8                          | Black Oak             | Black Knit                | 33 Pair      | 225.00                |
|                          | Delta 90               | Tuned Port                                 | 10                      | 4                         | Cone          | ¾                        | Dome         |  | 35-20 ±3                                    | 89                       | 15                                | 1k,5k                     | 8/6.4                           | 27 x 12 x 9                          | Black Oak             | Black Knit                | 33 Pair      | 350.00                |
|                          | Diamond III            | Tuned Port                                 | 4                       |                           |               | ¾                        | Dome         |  | 50-20 ±3                                    | 86                       | 20                                | 3.5k                      | 8/6.4                           | 9 x 7 x 8                            | Black Oak             | Black Knit                | 15½ Pair     | 150.00                |
|                          | Ritz Diamond           | Tuned Port                                 | 6½                      |                           |               | ¾                        | Dome         |  | 40-22 ±3                                    | 90                       | 15                                | 5k                        | 8/6.4                           | 14 x 9 x 8                           | Black Oak             | Black Knit                | 17½ Pair     | 225.00                |
|                          | Active Diamond Plus    | Powered Tuned Port                         | 4                       |                           |               | ¾                        | Dome         |  | 50-20 ±3                                    | Inc.                     | 3.5k                              |                           |                                 | 9 x 7 x 8                            | Black Oak             | Black Knit                | 18 Pair      | 175.00                |
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|                          | WATT II                | Ported                                     | 18                      |                           |               | 1                        | Dome         | No   | 50-18 ±3                                    | 91                       | 30                                | 1.8k                      | 4/2                             | 12 x 14 x 17                         | Opt.                  | Black Foam                | 120 Pair     | From 5700.00 Pair     |
|                          | WHOW Universal Powered | Ported Subwoof.                            | 18                      |                           |               |                          |              | W  | 16-55                                       | 91                       | 80                                | 55                        | 30/11                           | 17 x 29 x 40                         | Opt.                  |                           | 210          | 10,500, w/Xover       |
|                          | POW WHOW               | Powered Ported Subwoof.                    | 18                      |                           |               |                          |              | W  | 16-55                                       | 91                       | 400 Inc.                          | 55                        |                                 | 17 x 29 x 40                         | Opt.                  |                           | 260          | 13,500, w/Xover & Amp |
| WOLCOTT AUDIO            | Omnisphere MDF-1       | Ported                                     | (4)6½                   |                           |               | 1½                       | Dome         | T  | 30-18 ±3                                    | 90                       | 20                                | 2k                        | 8/5                             | 21 x 21 x 49                         | Oiled Oak Black Lacq. | Brown Knit Foam           | 110          | 4500.00 Pair          |
|                          | Omnisphere MDH-2       | Ported                                     | (4)6½                   |                           |               | 1½                       | Dome         | T  | 30-18 ±3                                    | 90                       | 20                                | 2k                        | 8/5                             | 21 x 21 x 49                         |                       |                           | 110          | 4750.00 Pair          |
| XSTATIC SYSTEMS          | EC-2                   | Inf. Baf.                                  | 10                      |                           |               |                          | ES           | No   | 38-22 ±3                                    | 90                       | 50                                | 150                       | 8/3                             | 73 x 24 x 14                         | Opt.                  | Opt.                      | 120          | 3850.00 Pair          |
|                          | EC-3                   | ES   | 22x70                   |                           |               |                          |              |  | 40-22 ±3                                    | 87                       | 50                                |                           | 6/2                             | 74 x 25 x 23                         | Opt.                  | Opt.                      | 100          | 5200.00 Pair          |
|                          | TL-X                   | Powered Trans. Line Subwoof.               | (4)10                   |                           |               |                          |              |  | 17-100 ±3                                   |                          | 300 Inc.                          | 100                       |                                 | 74 x 22 x 22                         | Opt.                  | Opt.                      | 290          | 3800.00 Pair          |
| YAMAHA                   | NSA95                  | Ac. Sus.                                   | 4½                      |                           |               | 2                        | Cone         |  | 120-18                                      | 91                       | 5                                 |                           | 4/                              | 9 x 9 x 3                            | Opt.                  | Opt., Knit                | 4¾           | 69.95 Pair            |
|                          | YST SV-90              | Bass Ref.                                  | 4¾                      |                           |               | 1                        | Dome         |  | 35-20                                       |                          |                                   | 2.5k                      |                                 | 15 x 10 x 9                          | Blue                  | Blue Knit                 | 9            | 450.00 Pair           |
|                          | YST SF-90              | Bass Ref.                                  | (4)4                    |                           |               | 1                        | Dome         |  | 30-20                                       |                          |                                   | 2.5k                      |                                 | 12 x 20 x 4                          | Blue                  | Blue Knit                 | 12¾          | 900.00 Pair           |
|                          | NS-E90                 | Bass Ref.                                  | 4                       |                           |               |                          |              |  | 120-20                                      | 88                       | 20                                |                           | 6/                              | 5 x 10 x 5                           | Blue                  | Blue Knit                 | 4½           | 80.00 Pair            |
|                          | YST-S1                 | Powered Bass Ref.                          | 6                       |                           |               | 1                        | Dome         |  | 28-20                                       |                          | 50 Inc.                           |                           |                                 | 17 x 4 x 15                          | Black                 | Black Knit                | 18¾          | 1200.00 Pair          |
|                          | NS-1                   | Ac. Sus.                                   | 6¼                      |                           |               | 1¼                       | Dome         | T  | 60-30                                       | 86                       | 60                                | 2.5k                      | 6/                              | 8 x 15 x 11                          | Birch                 | Brown Knit                | 20¾          | w/Amp 499.00          |
|                          | NS-10M                 | Ac. Sus.                                   | 7                       |                           |               | 1¾                       | Dome         |  | 60-20                                       | 91                       | 50                                | 2k                        | 8/                              | 8 x 15 x 8                           | Black                 | Black Knit                | 13¼          | 199.00                |
|                          | NSW10                  | Powered Subwoof.                           | 8                       |                           |               |                          |              | W  |   |                          | 60 Inc.                           |                           | 6/                              | 15 x 10 x 17                         | Black                 | Black Knit                | 29¾          | 359.00 w/Amp          |
|                          | NSW2                   | Powered Subwoof.                           | 10                      |                           |               |                          |              | W  |   |                          | 40 Inc.                           |                           | 6/                              | 18 x 14 x 12                         | Black                 | Black Knit                | 26½          | 289.00 w/Amp          |
|                          | YST-SW100              | Powered Subwoof.                           | (2)7½                   |                           |               |                          |              | W  | 24-150                                      | 91                       | 70 Inc.                           |                           | 5/                              | 8 x 22 x 16                          | Black                 | Black Knit                | 35¼          |                       |
| YANKEE AUDIO             | FPR-72 MKII            | Planar Ribbon                              | 1020 Sq. In.            |                           |               |                          |              |  | 29-20 ±2                                    | 88                       | 75                                |                           | 3/3                             | 30 x 72 x 3                          | Opt., Wood            | Opt., Knit                | 270 Pair     | 5800.00 Pair          |
| ZEBRA ACOUSTICS          | Z-6                    | Ducted Port                                | 6½                      |                           |               | 2                        | Cone         |  | 60-20                                       | 93                       | 5                                 | 1k                        | 8/6                             | 10 x 16 x 9                          | Black Ash Vinyl       | Gray Knit                 | 10¼          | 79.95                 |
|                          | Z-8                    | Ducted Port                                | 8                       |                           |               | 2                        | Cone         |  | 45-20                                       | 94                       | 5                                 | 1k                        | 8/6                             | 11 x 19 x 10                         | Black Ash Vinyl       | Gray Knit                 | 13½          | 99.95                 |
|                          | Z-10                   | Ducted Port                                | 10                      | 4                         | Cone          | 2                        | Cone         |  | 35-20                                       | 92                       | 10                                | 1k,5k                     | 8/6                             | 13 x 24 x 11                         | Black Ash Vinyl       | Gray Knit                 | 21           | 119.95                |
|                          | Z-12                   | Ducted Port                                | 12                      | 4                         | Cone          | 2                        | Cone         |  | 25-20                                       | 90                       | 10                                | 1k,5k                     | 8/6                             | 16 x 31 x 13                         | Black Ash Vinyl       | Gray Knit                 | 32½          | 149.95                |
| ZSE                      | 380                    | Dipole                                     |                         |                           |               |                          |              |  | 35-25                                       | 91                       | 50                                | 1.2k                      | 8/6                             | 34 x 17 x 27                         | Oiled Wal.            | Brown Knit                | 45           | 1800.00 Pair w/Xover  |

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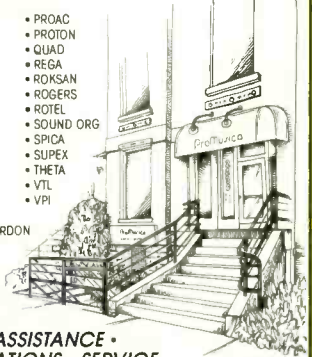
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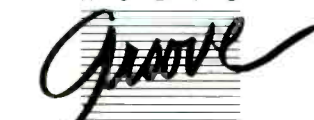
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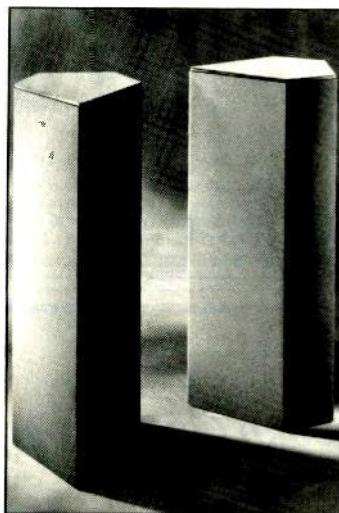
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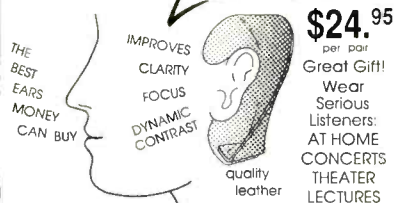
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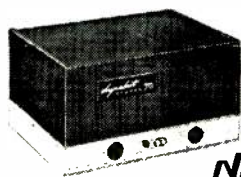
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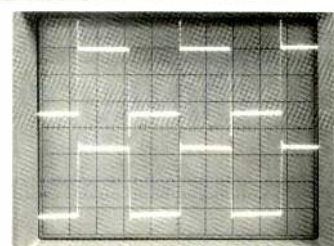
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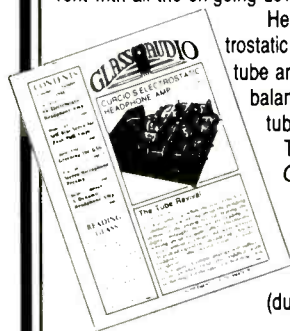
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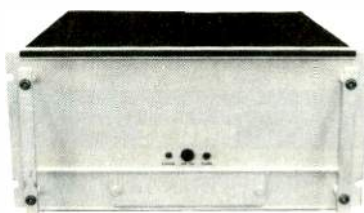
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| 177     | 145      | 145      | 110        | 110        | 145      | 145      | 110        | 110        |
| 75      | 54       | 54       | 28         | 21         | 75       | 54       | 28         | 21         |
| < 0,2   | < 0,3    | < 0,4    | < 0,3      | < 0,3      | < 0,3    | < 0,4    | < 0,6      | < 0,2      |
| 180     | 250      | 200      | 300        | 600        | 180      | 200      | 300        | 600        |
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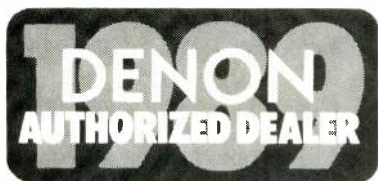
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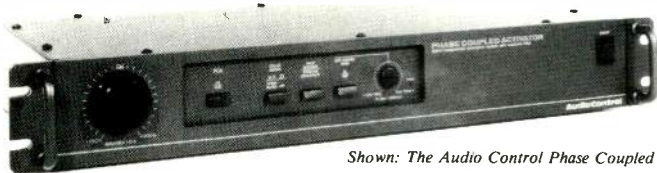
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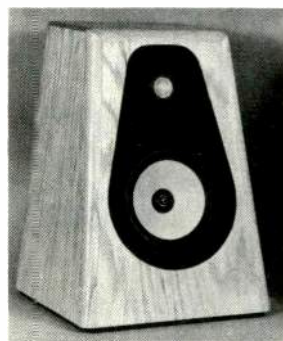
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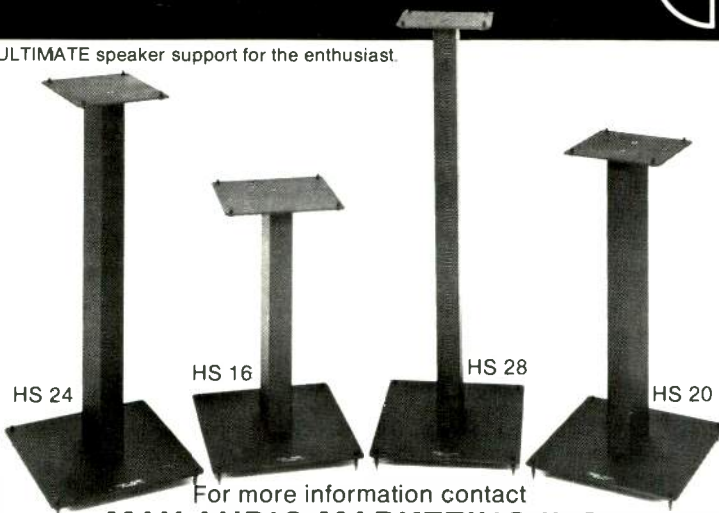
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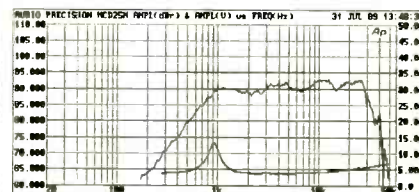
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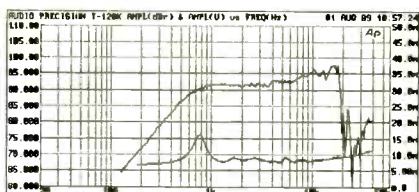
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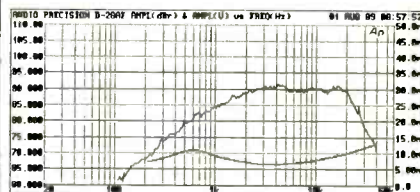
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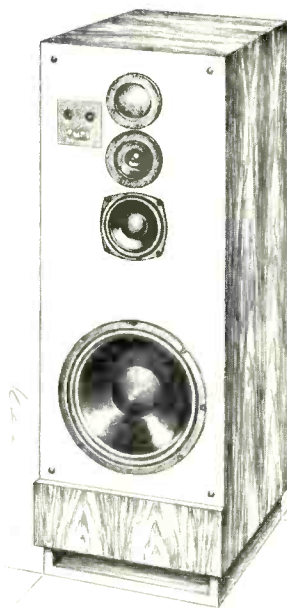
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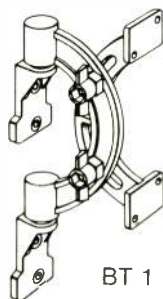
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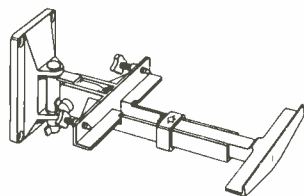


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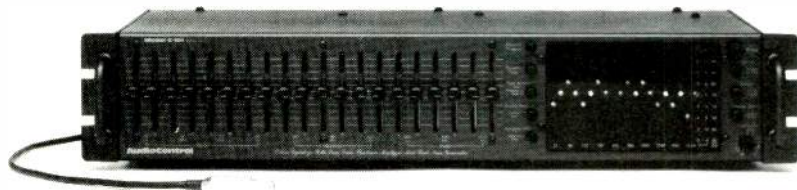
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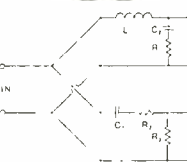
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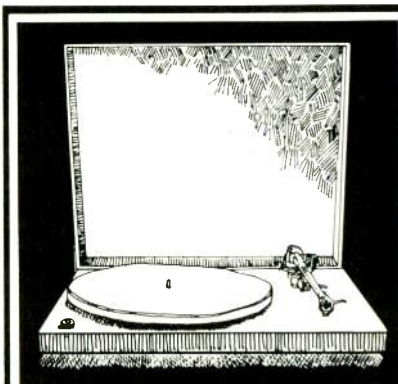
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## ADVERTISING INDEX

| Firm (Reader Service No.)  | Page                       | Firm (Reader Service No.)       | Page                        |
|----------------------------|----------------------------|---------------------------------|-----------------------------|
| 3A Audio Design (131)      | 254                        | M & K Sound (57)                | 113-117                     |
| a/d/s                      | 330 & 331                  | Madrigal                        | 105                         |
| Accuphase                  | 120                        | Magnepan (58)                   | 451                         |
| Acoustat (6)               | 443                        | Martin-Logan                    | 407                         |
| Acoustic Research (7)      | 245, 361                   | Mavrick                         | 282                         |
| Acoustic Sciences (8)      | 47                         | Maxell (59)                     | 301                         |
| Adcom (9, 10, 11)          | 187-190, 217, 255          | May Audio/WBT (60)              | 76                          |
| Adcom (12, 13, 14)         | 261, 269-272, Cover IV     | MB Quart Electronics (61)       | 409                         |
| Advent (15)                | 429                        | McIntosh (62)                   | 313                         |
| AKG Acoustics              | 306                        | Mirage (63)                     | 136 & 137                   |
| Altec Lansing (16)         | 348 & 349                  | Mission Electronics (121)       | 415                         |
| American Acoustics (17)    | 175-178                    | Mitsubishi (64)                 | 362 & 363                   |
| American Wood              | 45                         | Mobile Fidelity (65)            | 163                         |
| Apogee Acoustics (19)      | 365                        | Mod Squad                       | 351                         |
| Arcici                     | 282                        | Mondial (66)                    | 237                         |
| Audio Influx (20)          | 124                        | Monitor Audio (67)              | 411                         |
| Audio Research (1)         | 211-214, 247-250           | Monster Cable (68, 69, 70)      | 46, 223, 437                |
| AudioQuest                 | 417                        | Music Interface Technology (71) | 285                         |
| Audiostream (21)           | 439                        | NAD                             | 228 & 229, 231, 233         |
| B & K (22)                 | 165, 167, 169              | Nakamichi                       | Cover II & I                |
| B & W Loudspeakers (23)    | 441                        | NEC                             | 391 & 392                   |
| BBE Sound, Inc. (24)       | 343                        | NRG Control (72)                | 162                         |
| BIC America (25)           | 405                        | OHM (73)                        | 419                         |
| Blaupunkt (26)             | 316 & 317                  | Onkyo                           | 58-67, 225                  |
| BMG                        | 121 & 122                  | Orion (122)                     | 242 & 243*                  |
| Bose (27)                  | 378 & 379                  | Ortofon (98)                    | 168                         |
| Boston Acoustics           | 449                        | Parliament                      | 242 & 243*                  |
| Brystonvermont (28)        | 69-73                      | Phase Linear (74)               | 257                         |
| California Audio Labs      | 40-43                      | Philips                         | 139-147                     |
| Cambridge Soundworks (29)  | 387, 389                   | Pioneer (75, 76, 77)            | 31-38, 194 & 195, 426 & 427 |
| Canton (31)                | 412 & 413                  | Polk (78)                       | 7-30                        |
| Carver                     | 420 & 421, 431 & 432       | Precise (79)                    | 425                         |
| Carver                     | 77-82, 252 & 253, 297, 319 | Proton (80)                     | 333                         |
| Case Logic (32)            | 347                        | Pyle                            | 293                         |
| CBS Records                | 155                        | Reel to Real (81)               | 401 & 402                   |
| Cerwin-Vega (33)           | 377                        | SAE (82)                        | 218 & 219                   |
| Chesky Records             | 205                        | Salem                           | 227                         |
| Classé Audio (34)          | 241                        | Scosche Industries (83)         | 433                         |
| Columbia House             | 159                        | Sherwood (84)                   | 263, 284, 299, 345          |
| Component Guard (35)       | 311                        | Shure HTS (85)                  | 335 & 336                   |
| Convergent Audio           | 281                        | SIMS Vibration Dynamics         | 192                         |
| Counterpoint (38)          | 125-132                    | Sonance (2)                     | 355-358                     |
| Crutchfield                | 84                         | Sony                            | 183 & 184, 303              |
| Dahlquist (39)             | 48                         | Sound by Singer (123)           | 221                         |
| Denon (40)                 | 235                        | Soundcraftsmen (30)             | 87-102                      |
| Design Acoustics (132)     | 385                        | Specialty Woodworks (86)        | 75                          |
| DIC Digital (42)           | 304                        | Spectral (99)                   | 181                         |
| DMP Records (41)           | 156 & 157                  | Spica (87)                      | 172                         |
| Energy (43)                | 394 & 395                  | SSI Products Inc. (88)          | 86                          |
| Epicure (44)               | 383                        | Stax Kogyo (124)                | 329                         |
| Esoteric Audio (45)        | 326 & 327                  | Stereo Exchange (89)            | 453                         |
| Ford/JBL (46)              | 291                        | Sumo (4)                        | 106-111                     |
| Fosgate (47)               | 339                        | Tannoy (125)                    | 279                         |
| GlenMonitor                | 423                        | Tara Labs (126)                 | 85                          |
| Gold Sound (18)            | 381                        | TDK (90)                        | 119                         |
| GRP (48)                   | 171                        | Technics (91)                   | 151, 321                    |
| Hafler (49)                | 234, 287                   | Terk (130)                      | 259                         |
| Heath                      | 168                        | The Absolute Sound (36)         | 135                         |
| Hill Products (50)         | 162                        | Theta (127)                     | 238                         |
| Infinity Systems Inc. (51) | 435                        | Thiel (92)                      | 445                         |
| Intraclean (120)           | 174                        | Threshold                       | 289                         |
| Island Records (52)        | 161                        | Triad (93)                      | 48                          |
| J & R Music World (53)     | 134                        | U.S. Army                       | 149                         |
| Jackson Loudspeaker (54)   | 45                         | Vandersteen (94)                | 352                         |
| Jeff Rowland Design Group  | 207 & 208                  | Vecteur (95)                    | 275                         |
| JVC                        | 49-56                      | Wadia Digital (128)             | 341                         |
| Kenwood (5)                | 367-374                    | Well Tempered Labs (96)         | 277                         |
| Kinergetics Research       | 309                        | Wharfedale (129)                | 447                         |
| Klipsch (55)               | 455                        | Windham Hill                    | 173                         |
| KNi Loudspeakers           | 397 & 398                  | Wisconsin Discount Stereo       | 295                         |
| Koss (56)                  | 323 & 324                  | Yamaha                          | 193, 266 & 267              |
| Levinson                   | 3, Cover III               |                                 |                             |
| Luxman (3)                 | 197-202                    |                                 |                             |
| Lyle Cartridges (97)       | 288                        |                                 |                             |

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Box 8<br/>Pleasanton, Cal. 94566</p> <p><b>Aphex Systems</b><br/>13340 Satircoy St.<br/>No. Hollywood, Cal. 91605</p> <p><b>API</b><br/>Audio Products International<br/>3641 McNicoll Ave.<br/>Scarborough, Ont.<br/>Canada M1X 1G5</p> <p><b>Apogee Acoustics</b><br/>35 York Industrial Park<br/>Randolph, Mass. 02368</p> <p><b>AR</b><br/>330 Turnpike St.<br/>Canton, Mass. 02021</p> | <p><b>Aragon</b><br/>See Mondial</p> <p><b>Arant International</b><br/>See Cambridge Physics</p> <p><b>Arcam</b><br/>See Audio Influx</p> <p><b>Archer</b><br/>See Radio Shack</p> <p><b>Argent</b><br/>See Direct Sound</p> <p><b>Ariston Acoustics</b><br/>12 Route 17 North<br/>Suite 309<br/>Paramus, N.J. 07652</p> <p><b>Artech Electronics</b><br/>699 Meloche Ave.<br/>Dorval, Que.<br/>Canada H9P 2S4</p> <p><b>ASB Ltd.</b><br/>11605 Basswood Dr.<br/>Laurel, Md. 20708</p> <p><b>A &amp; S Speakers</b><br/>3170 23rd St.<br/>San Francisco, Cal. 94110</p> <p><b>ATC</b><br/>See Audio Ecstasy</p> <p><b>A + T Electroacoustic</b><br/>See Hemisphere Enterprises</p> <p><b>Athena Audio</b><br/>P.O. Box 210465<br/>San Francisco, Cal.<br/>94121</p> <p><b>Atma-Sphere Music Systems</b><br/>160 South Wheeler St.<br/>St. Paul, Minn. 55105</p> <p><b>Audible Illusions</b><br/>See Apax Marketing</p> <p><b>Audioaccess</b><br/>363A Vintage Park Dr.<br/>Foster City, Cal. 94404</p> <p><b>Audio Advancements</b><br/>P.O. Box 15<br/>Verona, N.J. 07044</p> | <p><b>Audio Concepts</b><br/>901 South 4th St.<br/>LaCrosse, Wisc. 54601</p> <p><b>Audio Control</b><br/>P.O. Box 3199<br/>Lynnwood, Wash. 98036</p> <p><b>Audiodata</b><br/>See German Acoustics</p> <p><b>Audio Design Associates</b><br/>610 Mamaroneck Ave.<br/>White Plains, N.Y. 10605</p> <p><b>Audio Dynamics</b><br/>707 East Evelyn Ave.<br/>Sunnyvale, Cal. 94086</p> <p><b>Audio Ecstasy</b><br/>231 Elwood Dr.<br/>Rochester, N.Y. 14616</p> <p><b>Audio Exklusiv</b><br/>See German Acoustics</p> <p><b>Audio Influx</b><br/>P.O. Box 381<br/>Highland Lakes, N.J. 07422</p> <p><b>Audiolab</b><br/>See Artech</p> <p><b>Audionics</b><br/>See Fosgate-Audionics</p> <p><b>Audiophile Systems</b><br/>8709 Castle Park Dr.<br/>Indianapolis, Ind. 46256</p> <p><b>Audiophore</b><br/>1711 North Crilly Court, #1E<br/>Chicago, Ill. 60614</p> <p><b>Audio Pro</b><br/>See Sonic Research</p> <p><b>Audio Products, Inc.</b><br/>3 Cleveland St.<br/>Headland, Ala. 36345</p> <p><b>AudioQuest</b><br/>P.O. Box 3060<br/>San Clemente, Cal. 92672</p> <p><b>Audio Research</b><br/>6801 Shingle Creek Pkwy.<br/>Minneapolis, Minn. 55430</p> <p><b>AudioSource</b><br/>1327 North Carolan Ave.<br/>Burlingame, Cal. 94010</p> | <p><b>AudioStream</b><br/>Box 2410<br/>Niagara Falls, N.Y. 14302</p> <p><b>Audio-Technica</b><br/>1221 Commerce Dr.<br/>Stow, Ohio 44224</p> <p><b>Audio Techniques</b><br/>1619 Broadway<br/>Fourth Floor<br/>New York, N.Y. 10019</p> <p><b>Audire</b><br/>9576 El Tambor Ave.<br/>Fountain Valley, Cal. 92708</p> <p><b>Audix</b><br/>5635 West Los Positas<br/>Unit 405<br/>Pleasanton, Cal. 94566</p> <p><b>A.V.A.</b><br/>Audio by Van Alstine<br/>2202 River Hills Dr.<br/>Burnsville, Minn. 55337</p> <p><b>Avalon Acoustics</b><br/>P.O. Box 704<br/>Boulder, Colo. 80306</p> <p><b>Axiom Audio</b><br/>Box 82, Hwy. #60<br/>Dwight, Ont.<br/>Canada P0A 1H0</p> <p><b>Azden</b><br/>147 New Hyde Park Rd.<br/>Franklin Square, N.Y. 11010</p> <p><b>B</b></p> <p><b>Bang &amp; Olufsen</b><br/>1150 Feehanville Dr.<br/>Mt. Prospect, Ill. 60056</p> <p><b>BASF</b><br/>Crosby Dr.<br/>Bedford, Mass. 01730</p> <p><b>Basis Audio Mfg.</b><br/>47 Green Heron La.<br/>Nashua, N.H. 03062</p> <p><b>BBE Sound</b><br/>5500 Bolsa Ave.<br/>Huntington Beach, Cal.<br/>92649</p> <p><b>BEAR Labs</b><br/>P.O. Box 144<br/>Hannacroix, N.Y. 12087</p> |
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Box 2160<br/>Portland, Ore. 97208</p> <p><b>Bib Audio/Video Products</b><br/>10497 Centennial Rd.<br/>Littleton, Colo. 80127</p> <p><b>BIC America</b><br/>895E Hampshire Rd.<br/>Stow, Ohio 44224</p> <p><b>B &amp; K Components</b><br/>1971 Abbott Rd.<br/>Lackawanna, N.Y. 14218</p> <p><b>Black Watch/3M</b><br/>Suite 1031<br/>One Appleton Square<br/>Bloomington, Minn. 55425</p> <p><b>Bondwell Industrial Co.</b><br/>47485 Seabridge Dr.<br/>Fremont, Cal. 94538</p> <p><b>Bose</b><br/>The Mountain<br/>Framingham, Mass. 01701</p> <p><b>Boston Acoustics</b><br/>70 Broadway<br/>Lynnfield, Mass. 01940</p> <p><b>Boulder Amplifiers</b><br/>4850 Sterling Dr.<br/>Boulder, Colo. 80301</p> <p><b>British Fidelity</b><br/>(In U.K., Musical Fidelity)<br/>See Music &amp; Sound</p> <p><b>Broadcast Electronics</b><br/>4100 North 24th St.<br/>Quincy, Ill. 62305</p> <p><b>Brüel &amp; Kjaer</b><br/>185 Forest St.<br/>Marlborough, Mass. 01752</p> <p><b>Bryston Ltd.</b><br/>57 Westmore Dr.<br/>Rexdale, Ont.<br/>Canada M9V 3Y6</p> <p><b>Brystonvermont</b><br/>R.F.D. 4, Berlin<br/>Box 2255<br/>Montpelier, Vt. 05602</p> | <p><b>BSM</b><br/>See Laser Audio</p> <p><b>B &amp; W Loudspeakers</b><br/>P.O. 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Box 18123<br/>Seattle, Wash. 98118</p> <p><b>Chairo</b><br/>616 North Flores, #308<br/>Los Angeles, Cal. 90048</p> <p><b>Citizen</b><br/>2020 Santa Monica Blvd.<br/>Suite 410<br/>Santa Monica, Cal. 90404</p> <p><b>Classé Audio</b><br/>9414 Cote de Liesse Rd.<br/>Lachine, Que.<br/>Canada H8T 1A1</p> <p><b>Classic Audio Ltd.</b><br/>238 Liberty Ave.<br/>New Rochelle, N.Y. 10805</p> <p><b>Classic Audio Reproductions</b><br/>5115 Red Fox<br/>Brighton, Mich. 48116</p> <p><b>Clearaudio</b><br/>P.O. Box 7028<br/>Westlake Village, Cal.<br/>91359</p> <p><b>Clements Audio Systems</b><br/>76 St. Clair Ave. West<br/>Fourth Floor<br/>Toronto, Ont.<br/>Canada M4V 1N2</p> <p><b>Don J. Cochran Inc.</b><br/>1900 Embarcadero Rd.<br/>Suite 109<br/>Palo Alto, Cal. 94303</p> <p><b>Community Light &amp; Sound</b><br/>333 East Fifth St.<br/>Chester, Pa. 19013</p> <p><b>conrad-johnson design</b><br/>2800R Dorr Ave.<br/>Fairfax, Va. 22031</p> <p><b>Convergent Audio Technology</b><br/>24 Falcon Dr.<br/>West Henrietta, N.Y. 14586</p> <p><b>Counterpoint</b><br/>2610 Commerce Dr.<br/>Vista, Cal. 92083</p> <p><b>Creek Audio Systems</b><br/>See Music Hall</p> <p><b>Crest Audio</b><br/>150 Florence Ave.<br/>Hawthorne, N.J. 07506</p> | <p><b>Crown International</b><br/>1718 West Mishawaka Rd.<br/>Elkhart, Ind. 46517</p> <p><b>CSI</b><br/>Calibration Standard<br/>Instruments<br/>P.O. Box 2727<br/>Oakland, Cal. 94602</p> <p><b>Cyrus</b><br/>See Mission Electronics</p> <p><b>Dahlquist</b><br/>601 Old Willets Path<br/>Hauppauge, N.Y. 11788</p> <p><b>Dana Audio</b><br/>P.O. Box 1<br/>Austin, Tex. 78767</p> <p><b>Danholt</b><br/>See German Acoustics</p> <p><b>D'Ascanio Audio</b><br/>11450 Overseas Hwy.<br/>Marathon, Fla. 33050</p> <p><b>Day Sequerra</b><br/>Davidson Roth<br/>P.O. Box 95707<br/>Hoffman Estates, Ill. 60195</p> <p><b>dB Plus</b><br/>See API</p> <p><b>dBritton Audio Systems</b><br/>3 West 22nd Ave.<br/>Vancouver, B.C.<br/>Canada V5Y 2E9</p> <p><b>DB Systems</b><br/>Main St., Box 460<br/>Rindge Center, N.H. 03461</p> <p><b>dbx</b><br/>707 East Evelyn Ave.<br/>Sunnyvale, Cal. 94086</p> <p><b>DCM</b><br/>670 Airport Blvd.<br/>Ann Arbor, Mich. 48108</p> <p><b>Decca</b><br/>See Townshend Audio</p> <p><b>DeCoursey Engineering Laboratory</b><br/>11328 West Jefferson Blvd.<br/>Culver City, Cal. 90230</p> <p><b>DELAC</b><br/>Delaware Acoustics<br/>P.O. Box 54<br/>Newark, Del. 19711</p> <p><b>Dennesen Electrostatics</b><br/>P.O. Box 51<br/>Beverly, Mass. 01915</p> <p><b>Denon</b><br/>222 New Rd.<br/>Parsippany, N.J. 07054</p> <p><b>Design Acoustics</b><br/>See Audio-Technica</p> <p><b>Desktop Loudspeakers</b><br/>P.O. Box 14526<br/>William Chick Station<br/>Kansas City, Mo. 64124</p> | <p><b>DIC Digital</b><br/>2 University Plaza<br/>Hackensack, N.J. 07601</p> <p><b>Digital Designs</b><br/>See Audix</p> <p><b>Dimensia</b><br/>See Thomson</p> <p><b>Direct Sound</b><br/>150 Fifth Ave.<br/>Suite 845<br/>New York, N.Y. 10011</p> <p><b>Discrete Technology Labs</b><br/>3254 Fifth St.<br/>Oceanside, N.Y. 11572</p> <p><b>Discwasher</b><br/>4309 Transworld Rd.<br/>Schiller Park, Ill. 60176</p> <p><b>Distech</b><br/>See Discrete Technology</p> <p><b>DLW Audio Consultants</b><br/>Main St.<br/>Stevens, Pa. 17578</p> <p><b>Dolan</b><br/>See Fanfare Int'l.</p> <p><b>DoReTech Audio Services</b><br/>P.O. Box 6054<br/>South Hackensack, N.J.<br/>07606</p> <p><b>Dual</b><br/>122 Dupont St.<br/>Plainview, N.Y. 11803</p> <p><b>Duntech Speakers</b><br/>See W &amp; W Audio</p> <p><b>Dynamic Electro Acoustics</b><br/>P.O. Box 110<br/>Dunkirk, N.Y. 14048</p> <p><b>Dynaudio</b><br/>See Madisound</p> <p><b>Ebony Acoustics</b><br/>See Mavrick</p> <p><b>Eidolon Research</b><br/>P.O. Box 1384<br/>Davidson, N.C. 28036</p> <p><b>Electrocompaniet</b><br/>See Music &amp; Sound</p> <p><b>Electronic Visionary Systems</b><br/>2531 Regent St., #17<br/>Berkeley, Cal. 94704</p> <p><b>Electron Kinetics</b><br/>1770 South Palo Verde Blvd.<br/>Lake Havasu City, Ariz.<br/>86403</p> <p><b>Electro-Voice</b><br/>600 Cecil St.<br/>Buchanan, Mich. 49107</p> <p><b>Eminent Technology</b><br/>225 East Palmer St.<br/>Tallahassee, Fla. 32301</p> |
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Box 9274<br/>Grand Rapids, Mich. 49509</p> <p><b>Euphonic Technology</b><br/>19 Danbury Rd.<br/>Ridgefield, Conn. 06877</p> <p><b>Eurostat</b><br/>1132 East Ave.<br/>Rochester, N.Y. 14607</p> <p><b>Exposure</b><br/>See Audiophile</p> <p><b>Expressive Technologies</b><br/>P.O. Box 46161<br/>Bedford, Ohio 44146</p> <p><b>F</b></p> <p><b>Fanfare International</b><br/>500 East 77th St.<br/>New York, N.Y. 10021</p> <p><b>Fenton Audio</b><br/>P.O. Box 212<br/>Yellow Springs, Ohio 45387</p> <p><b>Fidelus</b><br/>See Apax Marketing</p> <p><b>Fisher</b><br/>21350 Lassen St.<br/>Chatsworth, Cal. 91311</p> <p><b>FM Acoustics</b><br/>Tienhofstrasse 17<br/>CH-8820 Wädenswil<br/>Switzerland</p> | <p><b>FMS</b><br/>Favorite Music Systems<br/>319 A St. (Rear)<br/>Boston, Mass. 02210</p> <p><b>Focus Speaker Systems</b><br/>1101 East Second St.<br/>Dayton, Ohio 45403</p> <p><b>Forté Audio</b><br/>12919 Earhart Ave.<br/>Auburn, Cal. 95603</p> <p><b>Fosgate-Audionics</b><br/>P.O. Box 70<br/>Heber City, Utah 84032</p> <p><b>Fostex</b><br/>15431 Blackburn Ave.<br/>Norwalk, Cal. 90650</p> <p><b>Fried Products</b><br/>7616 City Line Ave.<br/>Philadelphia, Pa. 19151</p> <p><b>Fuji</b><br/>555 Taxter Rd.<br/>Elmsford, N.Y. 10523</p> <p><b>Fuselier Loudspeakers</b><br/>See Audio Products, Inc.</p> <p><b>G</b></p> <p><b>Garrott Brothers</b><br/>See TARA Labs</p> <p><b>GC-Thorsen</b><br/>P.O. Box 1209<br/>Rockford, Ill. 61105</p> <p><b>German Acoustics</b><br/>3558 Ridgeway Ave.<br/>Madison, Wisc. 53704</p> <p><b>GlenMonitor Speaker Systems</b><br/>Bldg. 804, Prestige Pkwy.<br/>Corporations Park<br/>Scotia, N.Y. 12302</p> <p><b>GNP</b><br/>1254 East Colorado Blvd.<br/>Pasadena, Cal. 91106</p> <p><b>Gold Aero</b><br/>2129 Venice Blvd.<br/>Los Angeles, Cal. 90006</p> <p><b>Goldmund</b><br/>See International Audio Technologies</p> <p><b>Golding</b><br/><i>United States:</i><br/>See Import Audio<br/><i>Canada:</i><br/>See May Audio Marketing</p> <p><b>Gold Sound</b><br/>P.O. Box 141<br/>Englewood, Colo. 80151</p> <p><b>Goldstar Electronics</b><br/>1050 Wall St. West<br/>Lyndhurst, N.J. 07071</p> <p><b>Goodmans</b><br/>1225 17th St.<br/>Denver, Colo. 80202</p> <p><b>Gordon Instruments</b><br/>P.O. Box 794<br/>Blacksburg, Va. 24060</p> | <p><b>Gotham Audio</b><br/>1790 Broadway<br/>New York, N.Y. 10019</p> <p><b>Gott Labs</b><br/>424 Clay Pitts Rd.<br/>East Northport, N.Y. 11731</p> <p><b>Grace</b><br/>See Sumiko</p> <p><b>Grado Laboratories</b><br/>4614 Seventh Ave.<br/>Brooklyn, N.Y. 11220</p> <p><b>Joseph Grado Signature</b><br/>921 Tice Pl.<br/>Westfield, N.J. 07090</p> <p><b>Graham Engineering</b><br/>1 Baron Park, #33½<br/>Burlington, Mass. 01803</p> <p><b>Grundig</b><br/>Lextronix, Inc.<br/>3520 Haven Ave., Unit L<br/>Redwood City, Cal. 94063</p> <p><b>Reuben Guss Enterprises</b><br/>215 West 92nd St.<br/>New York, N.Y. 10025</p> <p><b>H</b></p> <p><b>Hafler</b><br/>613 South Rockford Dr.<br/>Tempe, Ariz. 85281</p> <p><b>Hales Audio</b><br/>43272 Christy St.<br/>Fremont, Cal. 94538</p> <p><b>Harman Kardon</b><br/><b>Harman Kardon Citation</b><br/>240 Crossways Park West<br/>Woodbury, N.Y. 11797</p> <p><b>Harms Labs</b><br/>2016 Laporte Ave.<br/>Fort Collins, Colo. 80521</p> <p><b>Hartley Products</b><br/>1200 North 23rd St.<br/>Wilmington, N.C. 28405</p> <p><b>Helius Designs</b><br/>See Terpsichore Imports</p> <p><b>Hemisphere Enterprises</b><br/>12821 Julington Forest Dr.<br/>West<br/>Jacksonville, Fla. 32258</p> <p><b>Heybrook</b><br/>See D'Ascanio Audio</p> <p><b>High Biscuit Audio Systems</b><br/>P.O. Box 6476<br/>Bethlehem, Pa. 18001</p> <p><b>Hitachi</b><br/>401 West Artesia Blvd.<br/>Compton, Cal. 90220</p> <p><b>HM Electronics</b><br/>6675 Mesa Ridge Rd.<br/>San Diego, Cal. 92121</p> <p><b>I</b></p> <p><b>Icon Acoustics</b><br/>13 Fortune Dr.<br/>Billerica, Mass. 01821</p> | <p><b>Image</b><br/>See API</p> <p><b>Import Audio</b><br/>3149 Shenandoah St.<br/>St. Louis, Mo. 63104</p> <p><b>Impulse</b><br/>Route 2, Box 477<br/>Dover, Ark. 72837</p> <p><b>Incon</b><br/>See May Audio Marketing</p> <p><b>Infinity Systems</b><br/>9409 Owensmouth Ave.<br/>Chatsworth, Cal. 91311</p> <p><b>Integra Audio</b><br/>See dBritton Audio Systems</p> <p><b>Integral Audio</b><br/>1165 East Catlin St.<br/>Simi Valley, Cal. 93065</p> <p><b>International Audio Technologies</b><br/>13897 Willard Rd., Suite J<br/>Chantilly, Va. 22021</p> <p><b>Island Audio</b><br/>49 Cedar Swamp Rd.<br/>Glen Cove, N.Y. 11542</p> <p><b>Itone Audio</b><br/>3412 Eric Court<br/>El Sobrante, Cal. 94803</p> <p><b>J</b></p> <p><b>Jackson Loudspeaker Co.</b><br/>1326 North 32nd St.<br/>Phoenix, Ariz. 85008</p> <p><b>Jadis</b><br/>See Fanfare Int'l.</p> <p><b>Jamo Hi-Fi</b><br/>425 Huehl Rd., 3A<br/>Northbrook, Ill. 60062</p> <p><b>Janis</b><br/>See John Marovskis</p> <p><b>JBL</b><br/>240 Crossways Park West<br/>Woodbury, N.Y. 11797</p> <p><b>Jecklin</b><br/>See May Audio Marketing</p> <p><b>Jensen</b><br/>4136 North United Pkwy.<br/>Schiller Park, Ill. 60176</p> <p><b>JPW Loudspeakers</b><br/>See Power Audio</p> <p><b>JRM</b><br/>3716 Broadway N.E.<br/>Knoxville, Tenn. 37917</p> <p><b>JS Audio</b><br/>643 Speedwell Ave.<br/>Morris Plains, N.J. 07950</p> <p><b>JS Engineering</b><br/>519 East Middle Turnpike<br/>Manchester, Conn. 06040</p> <p><b>JVC</b><br/>41 Slater Dr.<br/>Elmwood Park, N.J. 07407</p> | <p><b>K</b></p> <p><b>Kebschull</b><br/>See German Acoustics</p> <p><b>KEF</b><br/>14120-K Sullyfield Circle<br/>Chantilly, Va. 22021</p> <p><b>Kenwood</b><br/>2201 East Dominguez St.<br/>Long Beach, Cal. 90810</p> <p><b>Kevek Loudspeaker Technology</b><br/>565 Westlake St., #200E<br/>Encinitas, Cal. 92024</p> <p><b>Kindel Audio</b><br/>32992 Calle Perfecto<br/>San Juan Capistrano, Cal. 92675</p> <p><b>Kinergetics Research</b><br/>6029 Reseda Blvd.<br/>Tarzana, Cal. 91356</p> <p><b>Kinetic Audio</b><br/>P.O. Box 31075<br/>Chicago, Ill. 60631</p> <p><b>Kirksaeter</b><br/>Niederrheinstr. 193<br/>4000 Dusseldorf<br/>West Germany</p> <p><b>Kiseki</b><br/>See Sumiko</p> <p><b>Klark-Teknik</b><br/>30B Banfi Plaza North<br/>Farmingdale, N.Y. 11735</p> <p><b>Klein &amp; Hummel</b><br/>See Gotham Audio</p> <p><b>KLH</b><br/>11131 Dora St.<br/>Sun Valley, Cal. 91352</p> <p><b>Klimo</b><br/>See Audio Advancements</p> <p><b>Klipsch</b><br/>P.O. Box 688<br/>Hope, Ark. 71801</p> <p><b>Klyne Audio Arts Ltd.</b><br/>828 7th Ave. S.E.<br/>Olympia, Wash. 98501</p> <p><b>kni Loudspeakers</b><br/>588 McKnight<br/>Westfork, Ark. 72774</p> <p><b>Koetsu</b><br/>712 South Military Trail<br/>Deerfield Beach, Fla. 33442</p> <p><b>Kort Audio</b><br/>1530 South 6th St., C608<br/>Minneapolis, Minn. 55454</p> <p><b>Koss</b><br/>4129 North Port Washington<br/>Milwaukee, Wisc. 53212</p> <p><b>Krell</b><br/>20 Higgins Dr.<br/>Milford, Conn. 06460</p> <p><b>Krell Digital</b><br/>20 North Plains Industrial Rd.<br/>Wallingford, Conn. 06492</p> |
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| <p><b>L</b><br/> <b>Lakeshore Imports</b><br/> 1009 North Jackson, #802<br/> Milwaukee, Wisc. 53202</p> <p><b>Lancer Electronics</b><br/> 12340 McCann Dr.<br/> Santa Fe Springs, Cal.<br/> 90670</p> <p><b>Lantana Ltd.</b><br/> P.O. Box 1958<br/> Garden Grove, Cal. 92642</p> <p><b>Laser Audio</b><br/> 1140 Eighth Line<br/> Oakville, Ont.<br/> Canada L6H 2R4</p> <p><b>Lazarus Electronics</b><br/> 8130 Coldwater Canyon<br/> North Hollywood, Cal.<br/> 91605</p> <p><b>Lectron</b><br/> See Audio Advancements</p> <p><b>Legacy</b><br/> See Reel to Real Designs</p> <p><b>Mark Levinson</b><br/> See Madrigal</p> <p><b>Lexicon</b><br/> 100 Beaver St.<br/> Waltham, Mass. 02154</p> <p><b>Linaeum</b><br/> 1238 N.W. Glisan<br/> Suite 404<br/> Portland, Ore. 97209</p> <p><b>Linn Hi-Fi</b><br/> See Audiophile Systems</p> <p><b>Lirpa Labs</b><br/> Main &amp; Elm Sts.<br/> New York, N.Y. 10101</p> <p><b>Loran</b><br/> 10-48 Clark St.<br/> Warren, Pa. 16365</p> <p><b>Luxman</b><br/> Div., Alpine Electronics<br/> 19145 Gramercy Pl.<br/> Torrance, Cal. 90501</p> <p><b>Lydkraft</b><br/> See Audio Techniques</p> <p><b>M</b><br/> <b>3M</b><br/> Consumer Video and Audio<br/> Building 223-5N<br/> St. Paul, Minn. 55144</p> <p><b>Madison Fielding</b><br/> 200 William St.<br/> Port Chester, N.Y. 10573</p> <p><b>Madisound</b><br/> P.O. Box 4283<br/> Madison, Wisc. 53711</p> <p><b>Madrigal Audio Laboratories</b><br/> P.O. Box 781<br/> Middletown, Conn. 06457</p> <p><b>Magnavox</b><br/> See Philips Consumer Products</p> | <p><b>Magnepan</b><br/> 1645 Ninth St.<br/> White Bear Lake, Minn.<br/> 55110</p> <p><b>Magnum Dynalab</b><br/> 255 Great Arrow Ave.<br/> Buffalo, N.Y. 14207</p> <p><b>Manticore</b><br/> See Panther Enterprises</p> <p><b>Maplenoll Electronic Co.</b><br/> 1095 Bellbrook Ave.<br/> Xenia, Ohio 45385</p> <p><b>Marantz</b><br/> 20525 Nordhoff St.<br/> Chatsworth, Cal. 91311</p> <p><b>Marchand Electronics</b><br/> 1334 Robin Hood La.<br/> Webster, N.Y. 14580</p> <p><b>Mariah Acoustics</b><br/> 93½ Chestnut St.<br/> Oneonta, N.Y. 13820</p> <p><b>John Marovskis Audio Systems</b><br/> 2889 Roebling Ave.<br/> Bronx, N.Y. 10461</p> <p><b>Martin-Logan</b><br/> P.O. Box 741<br/> Lawrence, Kans. 66044</p> <p><b>Mastercraft Audio</b><br/> Box 2661<br/> Huntington Station, N.Y.<br/> 11746</p> <p><b>Master Symphonic Co.</b><br/> 28878 Walnut Grove<br/> Southfield, Mich. 48034</p> <p><b>Mavrick</b><br/> 629 South Rancho Sante Fe<br/> Rancho Santa Fe, Cal.<br/> 92069</p> <p><b>Maxell</b><br/> 22-08 Route 208<br/> Fairlawn, N.J. 07410</p> <p><b>May Audio Marketing</b><br/> P.O. Box 1048<br/> Champlain, N.Y. 12919</p> <p><b>Mayware</b><br/> P.O. Box 58<br/> Edgware, Middlesex<br/> England HA8 7NJ</p> <p><b>MB Quart Electronics</b><br/> 25 Walpole Park South<br/> Walpole, Mass. 02081</p> <p><b>McIntosh Laboratory</b><br/> 2 Chambers St.<br/> Binghamton, N.Y. 13903</p> <p><b>Meitner Audio</b><br/> See Museatex Audio</p> <p><b>Melos Audio</b><br/> 723 Bound Brook Rd.<br/> Dunellen, N.J. 08812</p> <p><b>Memorex</b><br/> Memtek Products<br/> P.O. Box 901021<br/> Ft. Worth, Tex. 76101</p> | <p><b>Meridian</b><br/> 14120-K Sullyfield Circle<br/> Chantilly, Va. 22021</p> <p><b>Merrill Audio</b><br/> 2125 Central Ave.<br/> Memphis, Tenn. 38104</p> <p><b>MFA Systems</b><br/> 3178 Fowler Rd.<br/> San Jose, Cal. 95135</p> <p><b>J. A. Michell Engineering</b><br/> See Artech</p> <p><b>Milab</b><br/> See Klark-Teknik</p> <p><b>Mirage</b><br/> See API</p> <p><b>Mirror Image Audio</b><br/> 4016 Stonewall Ave.<br/> Fairfax, Va. 22032</p> <p><b>Mission Electronics</b><br/> 440 Discovery Park<br/> 3700 Gilmore Way<br/> Burnaby, B.C.<br/> Canada V5G 4M1</p> <p><b>Mitek</b><br/> One Mitek Plaza<br/> Winslow, Ill. 61089</p> <p><b>Mitsubishi</b><br/> 5757 Plaza Dr.<br/> Cypress, Cal. 90630</p> <p><b>MJS</b><br/> 2280A Stevens Creek Blvd.<br/> San Jose, Cal. 95128</p> <p><b>M &amp; K</b><br/> Miller &amp; Kreisel<br/> 10391 Jefferson Blvd.<br/> Culver City, Cal. 90232</p> <p><b>Modern Audio Consultants</b><br/> 112 Swanhill Court<br/> Baltimore, Md. 21208</p> <p><b>The Mod Squad</b><br/> 542 North Hwy. 101<br/> Leucadia, Cal. 92024</p> <p><b>Mondial</b><br/> 2 Elm St.<br/> Ardsley, N.Y. 10502</p> <p><b>Monitor Audio Loudspeakers</b><br/> P.O. Box 1355<br/> Buffalo, N.Y. 14205</p> <p><b>Monolith Acoustics</b><br/> c/o Lenz<br/> 17763 Lake Carlton Dr.<br/> Lutz, Fla. 33549</p> <p><b>Monster Cable</b><br/> 101 Townsend St.<br/> San Francisco, Cal. 94107</p> <p><b>Mørch</b><br/> See Audio Advancements</p> <p><b>Mordaunt-Short</b><br/> 1225 17th St.<br/> Suite 1430<br/> Denver, Colo. 80202</p> | <p><b>Morel Acoustics</b><br/> 414 Harvard St.<br/> Brookline, Mass. 02146</p> <p><b>Motif</b><br/> See conrad-johnson</p> <p><b>MTX</b><br/> See Mitek</p> <p><b>Museatex Audio</b><br/> 6605 Thimens Blvd.<br/> St. Laurent, Que.<br/> Canada H4S 1W2</p> <p><b>Muse Electronics</b><br/> P.O. Box 2198<br/> Garcoen Grove, Cal. 92642</p> <p><b>Musical Concepts Musical Design</b><br/> No. 1 Patterson Plaza<br/> Florissant, Mo. 63031</p> <p><b>Music Hall</b><br/> 108 Station Rd.<br/> Great Neck, N.Y. 11023</p> <p><b>Music Reference</b><br/> P.O. Box 40807<br/> Santa Barbara, Cal. 93140</p> <p><b>Music &amp; Sound Imports</b><br/> 30 Snowflake Rd.<br/> Huntingdon Valley, Pa.<br/> 19006</p> <p><b>N</b><br/> <b>NAD</b><br/> 575 University Ave.<br/> Norwood, Mass. 02062</p> <p><b>Nady Systems</b><br/> 1145 65th St.<br/> Oakland, Cal. 94608</p> <p><b>Nagra Magnetic Recorders</b><br/> 19 West 44th St.<br/> New York, N.Y. 10036</p> <p><b>NAIM Audio</b><br/> 1748 North Sedgwick St.<br/> Chicago, Ill. 60614</p> <p><b>Nakamichi</b><br/> 19701 South Vermont Ave.<br/> Torrance, Cal. 90502</p> <p><b>NEAR</b><br/> New England<br/> Audio Resource<br/> 1450 Hanover Ave.<br/> Meriden, Conn. 06450</p> <p><b>NEC Home Electronics</b><br/> 1255 Michael Dr.<br/> Wood Dale, Ill. 60191</p> <p><b>Nelson-Reed</b><br/> 15810 Blossom Hill Rd.<br/> Los Gatos, Cal. 95032</p> <p><b>Nestorovic Labs</b><br/> 8307 N.E. 110th Pl.<br/> Kirkland, Wash. 98034</p> <p><b>Neumann</b><br/> See Gotham Audio</p> <p><b>Nikko Audio</b><br/> 5816 Corporate Ave.<br/> Cypress, Cal. 90630</p> | <p><b>Niles Audio</b><br/> P.O. Box 160818<br/> Miami, Fla. 33116</p> <p><b>Nitty Gritty</b><br/> 4650 Arrow Highway #F4<br/> Montclair, Cal. 91763</p> <p><b>NOVA Electro-Acoustics</b><br/> P.O. Box 25488<br/> Los Angeles, Cal. 90025</p> <p><b>Novak Loudspeaker</b><br/> Merrits Island Rd.<br/> Pine Island, N.Y. 10969</p> <p><b>Now Hear This</b><br/> 537 Stone Rd.<br/> Benicia, Cal. 94510</p> <p><b>NRG Control</b><br/> P.O. Box 389<br/> Walled Lake, Mich. 48088</p> <p><b>O</b><br/> <b>Octave Research</b><br/> 183-08 Camden St.<br/> St. Albans, N.Y. 11412</p> <p><b>Ohm Acoustics</b><br/> 241 Taaffe Pl.<br/> Brooklyn, N.Y. 11205</p> <p><b>Olson Loudspeakers</b><br/> 920 Grayson St.<br/> Berkeley, Cal. 94710</p> <p><b>Omni Sound</b><br/> 4833 Keller Springs Rd.<br/> Dallas, Tex. 75248</p> <p><b>Onix Audio</b><br/> See Music Hall</p> <p><b>Onkyo</b><br/> 200 Williams Dr.<br/> Ramsey, N.J. 07446</p> <p><b>Option Audio</b><br/> P.O. Box 1411<br/> Wall, N.J. 07719</p> <p><b>Optonica</b><br/> See Sharp</p> <p><b>Opus 3</b><br/> See May Audio Marketing</p> <p><b>Oracle</b><br/> 505 Boul. Industriel<br/> Sherbrooke, Que.<br/> Canada J1L 1X7</p> <p><b>Oracle U.S.A.</b><br/> 1237 Nielsen Dr.<br/> Clarkston, Ga. 30021</p> <p><b>ORA Electronics</b><br/> 9410 Owensmouth Ave.<br/> Chatsworth, Cal. 91311</p> <p><b>Ortofon</b><br/> 122 Dupont St.<br/> Plainview, N.Y. 11803</p> <p><b>Otari</b><br/> 378 Vintage Park Dr.<br/> Foster City, Cal. 94404</p> <p><b>OWI</b><br/> 1160 Mahalo Pl.<br/> Compton, Cal. 90220</p> |
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# COMPANY ADDRESSES

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| <p><b>P</b></p> <p><b>PAC</b><br/>Perfectionist Audio Components<br/>172 Ocean Ave.<br/>Lynbrook, N.Y. 11563</p> <p><b>Packburn Electronics</b><br/>P.O. Box 335<br/>DeWitt, N.Y. 13214</p> <p><b>Panasonic</b><br/>One Panasonic Way<br/>Secaucus, N.J. 07094</p> <p><b>Panther Enterprises</b><br/>8825 Urbana Ave.<br/>Arleta, Cal. 91331</p> <p><b>Paradigm</b><br/>See AudioStream</p> <p><b>Paradox Speakers</b><br/>136 Oregon<br/>George A.F.B., Cal. 92394</p> <p><b>Parasound</b><br/>950 Battery<br/>San Francisco, Cal. 94111</p> <p><b>Paso Sound Products</b><br/>14 First St.<br/>Pelham, N.Y. 10803</p> <p><b>Pegasus Audio</b><br/>See Rayco Sound</p> <p><b>Phase Technology</b><br/>6400 Youngerman Circle<br/>Jacksonville, Fla. 32244</p> <p><b>Philips Consumer Products</b><br/>Interstate 40 &amp;<br/>Straw Plains Pike<br/>P.O. Box 14810<br/>Knoxville, Tenn. 37914</p> <p><b>Pickering</b><br/>Sunnyside Blvd.<br/>Plainview, N.Y. 11803</p> <p><b>Pinnacle Loudspeakers</b><br/>517 Route 111<br/>Hauppauge, N.Y. 11788</p> <p><b>Pioneer Electronics</b><br/>P.O. Box 1540<br/>Long Beach, Cal. 90801</p> <p><b>Plasmatronics</b><br/>2460 Alamo, S.E.<br/>Albuquerque, N.M. 87106</p> <p><b>PLC Audio</b><br/>13-16 133rd Pl.<br/>College Point, N.Y. 11356</p> <p><b>Plexus Audio Systems</b><br/>P.O. Box 684<br/>New Brunswick, N.J. 08901</p> <p><b>Polk Audio</b><br/>5601 Metro Dr.<br/>Baltimore, Md. 21215</p> <p><b>Posthorn Recordings</b><br/>142 West 26th St.<br/>New York, N.Y. 10001</p> <p><b>Power Audio Distributors</b><br/>3450 East Lake Rd.<br/>Palm Harbor, Fla. 34685</p> | <p><b>Precise Acoustic Laboratories</b><br/>200 Williams Dr.<br/>Ramsey, N.J. 07446</p> <p><b>Precision Audio</b><br/>223-47 65th Ave.<br/>Bayside, N.Y. 11364</p> <p><b>Premier</b><br/>See Sumiko</p> <p><b>Pres Speakers</b><br/>183 Main St.<br/>Northampton, Mass. 01060</p> <p><b>Primare Systems</b><br/>See Panther Enterprises</p> <p><b>Proac</b><br/>See Modern Audio Consultants</p> <p><b>Prodigy Audio Labs</b><br/>4345 Lindberg<br/>Addison, Tex. 75001</p> <p><b>Proton</b><br/>5630 Cerritos Ave.<br/>Cypress, Cal. 90630</p> <p><b>PS Audio</b><br/>4145 Santa Fe Rd.<br/>San Luis Obispo, Cal. 93401</p> <p><b>PSB Speakers</b><br/>575 University Ave.<br/>Norwood, Mass. 02062</p> <p><b>PSE</b><br/>Professional Systems Eng.<br/>7401 Lyndale Ave. South<br/>Minneapolis, Minn. 55423</p> <p><b>Q</b></p> <p><b>QED</b><br/>See May Audio Marketing</p> <p><b>QSC</b><br/>1926 Placentia Ave.<br/>Costa Mesa, Cal. 92627</p> <p><b>Quad Electroacoustics</b><br/>14120-K Sullyfield Circle<br/>Chantilly, Va. 22021</p> <p><b>Quanta Technologies</b><br/>See Rayco Sound</p> <p><b>Quasar</b><br/>1325 Pratt Blvd.<br/>Elk Grove Village, Ill. 60007</p> <p><b>Questor Loudspeakers</b><br/>See MJS</p> <p><b>Quicksilver Audio</b><br/>3707 North Merrimac Circle<br/>Stockton, Cal. 95209</p> <p><b>R</b></p> <p><b>Radford</b><br/>See Tercel</p> <p><b>Radio Shack</b><br/>1700 One Tandy Center<br/>Fort Worth, Tex. 76102</p> <p><b>Rane</b><br/>10802 47th Ave. West<br/>Everett, Wash. 98204</p> | <p><b>RATA</b><br/>See May Audio Marketing</p> <p><b>Rauna</b><br/>See Scandinavian Sounds</p> <p><b>Rayco Sound</b><br/>9141/9145 Arbuckle Dr.<br/>Gaithersburg, Md. 20877</p> <p><b>RCS Audio International</b><br/>1055 T. 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